Published
the 18th of each month by
PRACTICAL PUBLICATIONS
Incorporated
1342 N. Meridian St.
Indianapolis 4, Ind.
Telephone Riley 6771

Industrial FINISHING

W. H. ROHR, Editor **P. C. BARDIN, Associate Editor**

Contents

MAY, 1949
Vol. XXV, No. 7

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...tributed monthly to finishing ...n and paint shop foremen, ...duction superintendents, ...ists, purchasing agents and ...pany executives of metal-...rking, woodworking and mis-...laneous industrial plants ...ere production cleaning and ...shing are major operations in ...rts and products manufacture.

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Subscription Rates Per Year
U. S. and Possessions.....$2.00
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Acceptance under Section 34.64, P. L. & R., authorized.

25 TWENTY-FIFTH YEAR OF PUBLICATION

Production Levels. Based upon March reports to the Business Survey Committee of the National Association of Purchasing Agents, 16% of those polled indicated an increase in production; 48% maintained first quarter levels.

Production, like business itself is in a leveling-off or a period of adjustment. Reports from the same members back in November and December showed production and backorder declines. Of this group, 59% are either maintaining or increasing production, and 54% have improved order book positions. It is thought that timely price adjustments will strengthen percentages during the second quarter.

* * *

New Plastic. Lacelon is an extremely lightweight, lace-like material, which so far has been used as an attractive wrapping for packages, for lampshades and to make women's hats. For the latter, flowers are molded in between the plastic sheets. It can be washed, is spot-proof and flame resistant.

* * *

For Fewer Fires. Members of the world-wide membership of the National Fire Protection Assn., international non-profit fire control group, met at the Hotel Fairmont, San Francisco, Calif., May 16-19, 1949 for their 53rd annual meeting. Plans of strategy were laid down to combat needless fires which are currently killing 11,000 Americans each year and injuring or disfiguring for life twice that number. At the current rate of burning, more than two million dollars worth of valuable goods and materials disappear in smoke in the U.S. daily.

Special features of the fire parley will be meetings of the NFPA Fire Marshals' Section, NFPA Railroad Section, and NFPA Electrical Section, at which leaders in these fields will discuss fire control problems and new methods and techniques for limiting the fire waste.

* * *

The Oriental Influence has developed into a definite trend in furniture styles. Chinese designs offer stark simplicity, and if it follows the true Chinese flavor, black lacquer with gold trimmings and that peculiarly brilliant red will surely come into their own. This should prove to be a challenge to the American finishers' and decorators' art.

* * *

A New Lubricant which will not oxidize, decay or burn was recently announced by Sumner T. Pike, deputy chairman of the Atomic Energy Commission. It is said to be longer lasting than the machine in which it is used. The new lubricant is a by-product of the gaseous diffusion method for concentrating uranium 235, one of the two fissionable elements used in the atomic bomb. The method in-

(Continued on page 6)

Dolan's
LEATHER FINISHES

Satisfied users of our latest developments in Leather Finishes include many of the top names in Nationally advertised Novelty Furniture.

DOLAN'S LEATHER FINISHES will not crack, craze or lift regardless of how the Leather is folded, creased or handled. They will permit of stretching, tooling, glueing, etc.

#1375 LEATHER LACQUER
LEATHER SHADING STAINS
PADDING STAINS

"From the start,—consider the *FINISH*"

V. J. DOLAN & COMPANY, Inc.

Manufacturers of "Unquestionable Quality"
INDUSTRIAL FINISHES
1830 N. Laramie Ave. Chicago 39, Ill.

Tack-Off Dust, Grit and Lint with a "DUST-ALL" Tack Rag before finishing

Specks of dust, grit and lint accumulating on surfaces to be finished, cause blisters and blemishes when painted over. For only a few pennies per job, your finishing department provided with "Dust-All" Tack Rags to wipe off, collect and hold this objectionable matter, can be assured of fine finish jobs.

Ask for further information on "Dust-All" Tack Rags for industrial use and for a sample.

Be sure to get the Tack Rag that comes in the Red Checkered Bag.

HARDING
Manufacturing Co.
10620 Gratiot Ave., Detroit 13, Mich.

Remove any finish this SAFE way!

SAF-TE Non-Burning Remover was designed especially for use in places where fire prevention is all-important. *It simply will not burn,* even when exposed to an open flame. Does a top-flight removing job on any type of finish—reduces it to a soft, buttery sludge that comes off like putty. Saves time and work, too—requires no after-wash.

We have specialized in developing removers for leading industrial firms for over 30 years. Perhaps we can aid you with your removing problem. Fill in coupon.

SAF-TE
Non-Burning Remover

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125 Chestnut Street, Newark 5, N. J.

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125 Chestnut St., Newark 5, N. J.
We are interested in stripping finishes
from.....
Type of Finish.....
Name.....
Company.....
Street.....
City.....State.....

volves the use of uranium-fluorine compound. Efforts to combat the action of fluorine on pipes and valves resulted in discovery of the lubricant. Discovery was made by scientists at Oak Ridge, Tennessee.

* * *

A **Super-Lamp** has been developed which it is said will produce light from seven to 15 times the intensity of sunlight on a bright day. It has a rated capacity of 750-watts. The lamp was developed for flood lighting, especially in high speed photography. It is said to produce ample light for taking motion pictures at a speed of 8000 frames per second.

With the advent of super-speed movies, many industrial processes will virtually "come to light". Taken at high speed and projected in slow-motion, we should be able to determine exactly what happens in any operation or process.

* * *

Fireproof Wood. It has been discovered that wood, soaked in certain chemicals for about 45 minutes, becomes flame proof. The inventor claims that wood so treated will withstand the heat of a blow torch (1800° F.). The wood merely chars; it will not burst into flame. When the torch is removed, even the charring stops. A "class A" fire is said to generate about 1200° F. heat.

The wood is treated before it is kiln dried. Chemicals used in fireproofing are secret until the idea is patented.

* * *

Cold Solder has been developed. It is made with aluminum powder and requires no heat. It is about the same consistency as dough, and may be applied by putty knife or spatula. The solvents evaporate and the metal mass hardens. After hardening, it may be ground off the same as metal.

(Continued on page 100)

AMAZING TAPE SOLVES PROBLEM FOR SHIPPERS OF ENAMELED GOODS

Hold movable parts firmly in place during shipment with a special new cloth tape that *pulls off clean* and *leaves absolutely no stain* or discoloration! Bauer & Black Industrial Adhesive Tape No. 158 was specially designed to meet the need, among shippers of enameled goods, for a strong, non-staining binding tape. Here are the main advantages of Tape No. 158:

TENSILE STRENGTH: 46 lbs. per in. of width.

PULLS OFF CLEAN, with no messy residue. Retains this quality at high temperatures—up to 180° F.!

ABSOLUTELY NON-STAINING, non-discoloring. Safely used on many white and pastel finishes (alkyd, urea and nitrocellulose lacquers). In photo above,* workman is applying Tape 158 to Kitchen-Kraft wall cabinet doors finished with Dupont Dulux baked-on enamel.

WRITE US for **FREE** test samples. Inquiries welcome. No obligation. Address Dept. 4-5, 2500 S. Dearborn St., Chicago 16.

*Courtesy of the Midwest Mfg. Co., Galesburg, Ill.—one of the largest manufacturers of steel kitchens

A product of

BAUER & BLACK

Division of The Kendall Company, 2500 S. Dearborn St., Chicago 16

Industrial Adhesive Tape

PRESSURE SENSITIVE

Production Short Cuts to Reduce Costs • Research to Speed and Improve Methods

Painting Bicycle Rims

By J. FARKAS
Assistant General Manager
Arnold, Schwinn & Co.

Process includes cleaning, phosphate coating, dry-off, electrostatic spray painting, infra-red drying and mechanical striping.

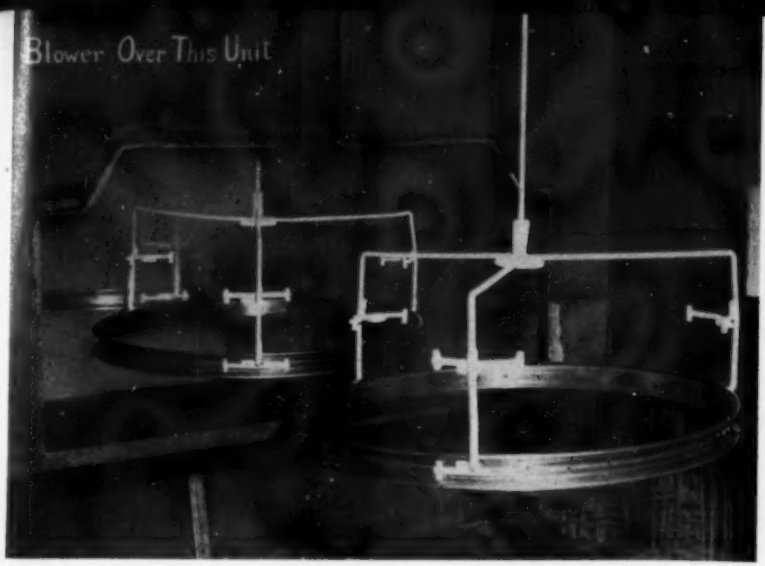
The girl? That's Janis Paige, star at Warner Brothers Studio.

IN OUR PLANT bicycle wheel rims are brought to the finishing room from the fabrication department on an overhead monorail conveyor. They are supported horizontally by 3-point suspension, in racks that have a central bearing which permits the rim to be revolved during metal cleaning and electrostatic spray painting.

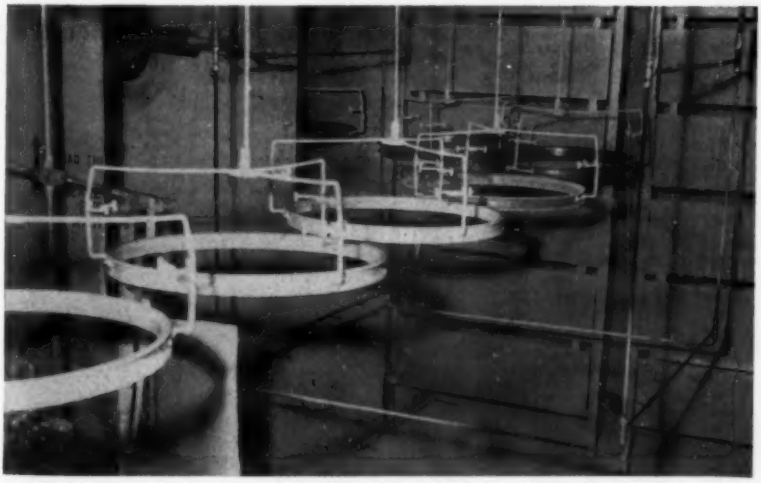
The clamps which hold the rim make contact only on the rim's concave side (where the tire will be mounted). This allows an unbroken finish on the convex or spoke side of the rim and around the edges.

Rims Are Washed in a One-Stage Washer

Incredible as it may seem these bicycle rims are washed and their surfaces are prepared for coating in only 30 seconds, in a one-stage washer. A phosphoric acid emul-



Suspended bicycle rims are rotated horizontally as they pass through the metal-cleaning, rust-proofing zone—a one-stage washer. Elapsed time in the washer is only 30 seconds.



In this picture the rims are coming forward from background—passing through a high-voltage, low-amperage electrostatic field as they approach the single automatic spray gun at left. Very little overspray occurs because the electrically charged atomized paint particles are attracted to the metal bicycle rims which have opposite polarity.

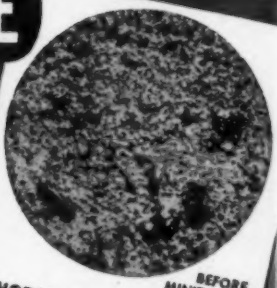
MINIT-KOTE

CLEANS..NEUTRALIZES ..PHOSPHATIZES IN "60" SECONDS

- No Rinse Required
- Adaptable To All Washers
- Minimizes Maintenance
- Saves Time
- Saves Space

PRODUCES BETTER CLEANING—STRONGER PAINT BOND

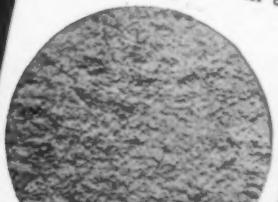
Don't gamble paint performance over a metal surface that has been only cleaned. Follow the lead of other wise manufacturers (toys to automotive truck cabs) Phosphatize the surface with MINIT-KOTE, a new original product that cleans and provides a quality paint bond in one operation at a minimum cost. Write us your cleaning problems and ask for a KLEM Service Engineer to help you with the solution—No obligation.



BEFORE MINIT-KOTE

PHOTOMICROGRAPHS PROVE VALUE OF MINIT-KOTE

Photographs show a dirty, hot-rolled steel surface before and after a one minute wash with MINIT-KOTE at 165°F in a power washer 1% by volume concentration. Neither paint nor primer will adhere to a dirty, oily or rusty surface. Thorough cleaning is not sufficient for a satisfactory job MINIT-KOTE cleans, removes light rust and forms an adherent phosphate coating on the cleaned surface in one economical operation Write for descriptive literature

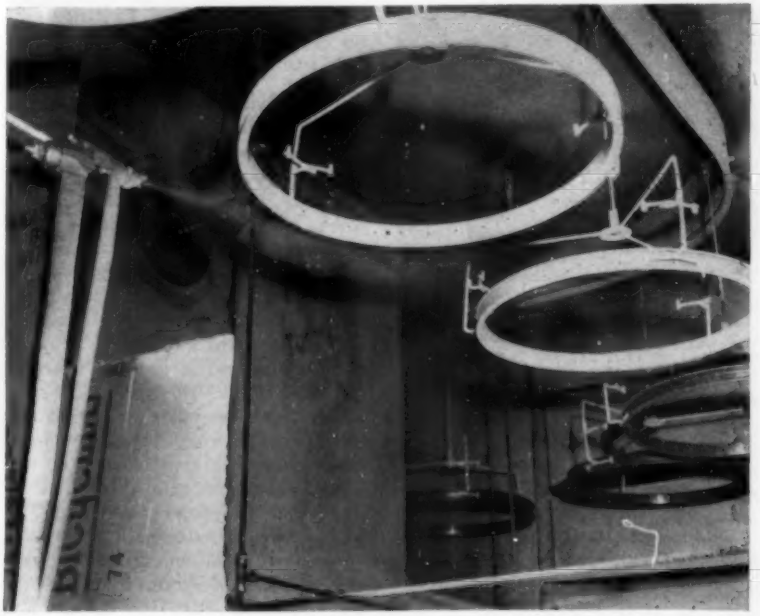


AFTER MINIT-KOTE

KLEM Chemicals Inc.

OFFICES IN PRINCIPAL CITIES

14401 LANSON • DEARBORN, MICHIGAN



Close-up of automatic spray gun (left) which directs a stream of low-pressure atomized ivory enamel toward rotating bicycle rims as they pass through the electrostatic zone.

sion type cleaner solution (at a concentration of 1½% volume and at a temperature of 160°F.) is sprayed from nozzles located on four sides of the interior of the washer, at a pressure of 25-lbs. The force of the spray causes the rims and their racks to rotate, which is a distinct aid in the cleaning process.

No rinsing is required, therefore the second stage compartment of the washer is not used except that the steam is turned on, and this heats the rims before they enter the blow-off and dry section.

Oil is floated off the cleaner tank twice in an 8-hour shift, and the washer is drained and thoroughly cleaned once a week. The capacity of this washer is 200 to 250 rims per hour. The cleaning material leaves a phosphate coating on the surface of the metal. This phosphate coating provides an excellent rustproofing base to which the paint adheres perfectly.

Spraying the Rims Electrostatically

Rims travel about six minutes before they reach the spray booth where an ivory colored enamel is sprayed at low pressure through an electrostatic field. The enamel is

Finished rims leaving 24-ft. infra-red oven in which the ivory colored enamel coating is baked for three minutes at 270° F.

sprayed at a viscosity of 25 seconds at 78° F., measured with a No. 4 Ford cup. An atomizing pressure of only 6-lbs. per square inch, and a fluid pressure of 2½-lbs. are used. Rims are mechanically rotated as they are electrostatically coated by one fixed spray gun.

Conveyor speed is 8-ft. per minute. *Spraying through an electrostatic field produces a full, uniform thickness coat on the rims, with complete coverage and no runs.* It is more economical than hand spraying because there is little if any loss of material through overspray.

About three minutes flash (air drying) time is allowed before the painted rims enter an infra-red oven where the enamel is baked for three minutes at 270° F. Rims cool for about ten minutes as they travel to the striping machine.

Painted Rims Are Mechanically Striped

Stripes are applied with a mechanical striping device which is triangular in shape. The rim is placed in a vertical position so it is supported by two spring rollers at the bottom of the triangle, while at the top it bears against a fixed roller. Inside the rim, and contacting its convex surface is a steel face roller with two projecting ridges around its circumference. These ridges on the roller apply the stripes. The roller operates in a shallow pan which contains the lacquer base material used for striping. As the rim is revolved by hand, the two contrasting color stripes are rolled on. After air drying, the striped rims are sent to the assembly lines for spokes and hubs, and then to the tire mounting station.

Wilkinson Equipment Co. News Calls for Correction

The first paragraph of the information we gave you for the announcement which appears on page 132 of the April issue of INDUSTRIAL FINISHING is somewhat misleading. This is entirely our fault, but we would appreciate your correcting this in the May issue. This should have read:

"The Wilkinson Equipment Co. of 6958 South Wentworth Ave., Chicago 21, Ill., whose business was that of selling Sundstrand Sanding and Rubbing Machines exclusively, announces that it is expanding its business and will handle Sundstrand Sanding and Rubbing Machines as well as engineering furniture finishes from the cabinet room to the packing case, and will also handle a full line of equipment and supplies."

This letter was given to my former secretary to handle and I just discovered the error through a call from Sundstrand Machine Tool Co.—H. D. Wilkinson, Gen. Manager.

You Know it's the Best

IN AIR TRANSFORMERS

Into every DeVilbiss Air Transformer goes all the engineering ability and manufacturing "know-how" accumulated through 60 years of continuous spray experience. That is why DeVilbiss Transformers are preferred by product finishers everywhere to deliver clean, moisture-free air to the spray gun at properly regulated pressures.

Pressure regulation is certain with the DeVilbiss HLC. An exceptionally pressure sensitive, yet unusually tough diaphragm responds to fine adjustment. The air capacity of the HLC which is sufficient for two production guns remains constant. Non-clogging filter assures unobstructed air passage. Airborne moisture and foreign matter is thrown out by centrifugal separators and discharged by the automatic water drain. Maintenance is negligible. There are no filter packs to become saturated and by-pass accumulated dirt. All parts are treated to prevent corrosion or oxidation . . .

Consult DeVilbiss about air transformers and for expert help with all your spray equipment needs. Remember, when you buy *DeVilbiss* you buy the *Best.*

THE DEVILBISS COMPANY • Toledo 1, Ohio

Canadian Plant: WINDSOR, ONTARIO

DE VILBISS

means QUALITY in all four

DEV

Spray Equipment

Air Compressors

Exhaust Systems

Hose and Connections

Let's talk about

FINISHES *for* PLASTICS

By E. MILLER
Chief Chemist
Midland Industrial Finishes Co.

Photograph, courtesy of Koppers Company, Inc.

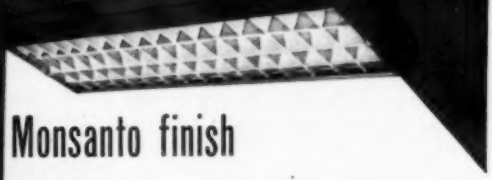
NOT TOO MANY years ago, surface coatings were designed chiefly for use on either wood or metal. In the finishing of metals it was soon learned that no one coating material was universally applicable. Finishes with excellent adhesion to steel, when applied to brass, could often be flaked off easily with the fingernail. Lacquers used on brass were often too dark for silver. Aluminum, zinc, and terne plate presented characteristically difficult adhesion problems.

Whenever outdoor durability was a factor, a large percentage of otherwise acceptable finishes was ruled out. *The best coating for each job was usually one specifically designed for the particular metal and the circumstances surrounding its use. Close cooperation between progressive user and manufacturer resulted in the most satisfactory solution to every new application.*

Calls for a Specially Designed Finish

Just as each metal finishing job is best handled by particular coating, so is each new plastic finishing problem best solved by an individually designed finish. Most of us

SYLVANIA lights the way to sales



Monsanto finish

The bright, white reflective coating on Sylvania Electric's fluorescent reflectors and louvers is a special finish they call Miracoat made to meet their specifications by Monsanto Chemical Company. Sylvania wanted ... and got from Monsanto ... a synthetic enamel finish with these qualities:

1. **High (86% minimum) and controlled light reflectance value.**
2. **White that stays whiter longer.**
3. **Real adhesion and toughness.**
4. **Excellent corrosion resistance.**

This is one case (of many) where Monsanto's outstanding laboratory background plus a manufacturer's advance production techniques and field control were combined to produce a top-quality, fast selling product.

Why not put Monsanto know-how to work on your finishing problem *now*?

Miracoat: Reg. U. S. Pat. Off.

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CHEMICALS — PLASTICS

MONSANTO CHEMICAL COMPANY, MERRIMAC DIV.
Desk No. IFM5, Boston 49, Mass.

Please send me information on Monsanto's finishes for

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

know that a lacquer which may work perfectly on a sheet of vinyl stock will cause nothing but trouble on a molded polystyrene object. Further, a baking enamel that meets every demand for the ideal coating for a Bakelite radio cabinet obviously cannot be used on thermoplastics like cellulose nitrate or acetate.

On the basis of past experience, certain broad statements may be made regarding the proper coating to be used on various plastic items. However, individual requirements and plastic compositions vary to the extent that nothing less than careful collaboration with the manufacturer of the coating will result in the most satisfactory results.

Phenol Formaldehyde (Bakelite, Resinox, etc.) is an excellent example of a plastic which has been successfully finished on a large scale. Millions of handsomely styled, light colored radio sets, and innumerable knobs, dials and cases have been finished with satisfying results.

Most of us are familiar with the specially formulated urea alkyd baking enamels that provide hard, tough, adherent, heat and mar resistant coatings for Bakelite. When, for any reason, extremely low baking schedules are essential, melamine types have proven to be more useful.

Where facilities for baking are not available or when baking is not feasible for some reason, it is possible to use certain air-drying lacquers, at some sacrifice in the properties obtainable with amine bake enamels. We know the benefits derived by thorough removal of excess mold lubricant from the surface. We have learned that undercured plastic tends to retard drying and discolor subsequent enamel topcoats.

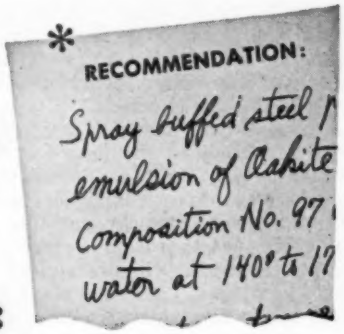
Occasionally, there is a demand for improved adhesion to the plastic, either because of exceptionally severe usage, or because the plastic composition itself causes extreme difficulty. In these severe cases, the use of a special primer, which may be "flashed' on prior to the topcoat, will give marked improvement.

Urea and melamine (Beetle, Plaskon, etc.) are thermosetting plastics which are considerably more difficult to coat, offering a greater adhesion problem. In difficult cases, a modified vinylite baking enamel often gives excellent results.

Vinylite plastics (chloride or chloride-acetate copolymers), because of high chemical resistance, toughness, dimensional stability, and relatively low cost are being used in ever increasing quantities. Improper surface coating may detract greatly from the inherent strength of many vinyl stocks, however. In the manufacture of calendared vinyl stock, certain mechanical strains are induced, which are only partially alleviated by subsequent platen pressing. Unsuitable coatings actually accentuate these strains to the point of rendering the stock brittle.

Research has shown that the solvents used in the coatings are just as important as the non-volatile constituents. Certain groups of solvents cause severe embrittlement; other solvents are only slightly deleterious, and a third group have

For every metal-cleaning job there is an efficient Oakite method:



Precleaning in tanks . . . * in machines . . . .
Alkaline cleaning in tanks . . . in machines . . .
Pickling . . . Barrel cleaning . . . Electrocleaning . . .
Pre-paint treatment in tanks . . . in machines . . .
Steam-gun cleaning . . . Paint stripping.

FOR MORE INFORMATION about these and other processes—burnishing, anti-rusting, treating water in paint spray booths, providing coolant and lubricant for machining and grinding—consult the Oakite Technical Service Representative in your vicinity or write direct. Oakite Products, Inc., 32F Thames Street, New York City, New York.

OAKITE
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INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE
Technical Service Representatives in Principal Cities of U. S. & Canada

practically no ill effect. Unfortunately, the harm done is not immediately evident, but often it is apparent only after considerable aging of the coated plastic.

A recent raw material development has provided the base for a lacquer which combines freedom from solvent type embrittlement, with hardness, chemical and abrasion resistance approaching that of the plastic itself. Vinylite articles, such as display boards, playing cards, engineering instruments, etc., requiring lacquer protection or decoration, may now be finished.

Polystyrene (Styron, Lustron, etc.) presents a somewhat similar problem to vinylite in sensitivity to solvents, but its shortcomings are immediately and sometimes very strikingly demonstrated. Here is another case of a plastic having physical strains which are affected by different solvents. The release of these strains is manifested in a typical "frosted" appearance imparted to the plastic upon contact with active solvents.

The degree of "frosting" seems to be related to the degree of solvency for polystyrene of the volatile portion of the coating. Xylol and toluol, for example, being powerful solvents for polystyrene, cause severe frosting. Unfortunately, there are relatively few solvents that do not dissolve or soften polystyrene. Alcohols and aliphatic hydrocarbons are the principal non-solvent types. A skillful blending of solvents, combined with the proper film forming materials are necessary to produce an adherent, non-frosting coating.

Finishes for polystyrene are often called upon to withstand severe temperature changes, coupled with the high humidity and abrasion conditions encountered in such places as refrigerator interiors. The potential low cost of polystyrene, coupled with its excellent color, dielectric properties, and water resistance assure it an ever-widening future market in which surface coating will be a really important consideration.

Methyl methacrylate (Lucite, Plexiglas, etc.) plastics are also susceptible to solvent inspired weakening but to a much lesser degree than either polystyrene or vinylite. In fact, in many instances, methyl methacrylate objects or sheets may be coated with conventional lacquer enamels, with no difficulty.

Occasionally, an irregular mechanical structure, with an attendant differential in solvating action, may result in the development of fine cracking in the molded piece. The solution, in these cases, lies in the use of specially formulated lacquers where solvent action is at a minimum. Where methyl methacrylate parts are to be coated, the above information should be kept in mind in the initial design of the mold. Wherever possible, great differences in wall thicknesses, etc., are to be avoided to minimize cracking in the finishing operation.

Cellulose nitrate (Pyroxylin, celluloid, etc.) plastics are among the simplest to coat. Practically all nitrocellulose lacquers, and a great many other types, adhere well to this pioneer of the plastic industry. For applications such as nitrate playing card lacquers, extremely high abrasion resistance is obtain-

LOOK TO

Watson-Standard

FOR THE UNUSUAL IN *Industrial Finishing*

For the finish that stands out from the ordinary . . . the finish that provides the extra eye appeal, the added durability which will sell and protect your product . . . look to Watson-Standard. We will compound a prescription finish for your product and incorporate such qualities as high gloss, depth, flexibility, good fabrication or any characteristic you desire.

The wide experience of our laboratory technicians in this field is available to you without obligation. Write today.

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Prescription Finishes
Give us your coating problem. We guarantee you an answer based on your conditions, and not just a standardized formula.

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Manufacturers of
PAINTS • VARNISHES • INDUSTRIAL FINISHES AND LITHOGRAPH COATINGS

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WAREHOUSES: BOSTON, BUFFALO, DETROIT, NEW YORK

able in special formulations. Occasionally, the coating must be modified to perform properly over certain types of inks applied on the plastic.

Cellulose Acetate (Tenite 1, Plastacele, etc.) at one time caused considerable consternation among those people attempting lacquer finishing. Many acetate pieces which were originally coated with hard adherent films would, under the influence of time and humidity, react to change the coatings into tacky or even wet, smeary films. It has been established that this phenomenon was caused by a migration of the plasticizer used in the acetate plastic to the more compatible lacquer finishing coat. One solution to the problem involves the use of cellulose acetate itself or cellulose acetate butyrate as the coating vehicle.

In many cases, a solution of lacquer grade cellulose acetate in proper solvents produces an excellent coating for cellulose acetate plastics. In some cases, this type of coating has been successfully used as a primer-sealer under subsequent, more conventional lacquers. For accelerated testing, it has been found that several days exposure to 100% humidity at 100° F. will generally cause improperly coated acetate pieces to become tacky or lose adhesion.

Cellulose Acetobutyrate (Tenite II, etc.), although a first cousin to cellulose acetate, requires a different coating. Apparently, cellulose acetobutyrate is not sufficiently compatible with cellulose acetate for the two to produce a good bond. Two types of coatings have worked satisfactorily on the cellulose acetobutyrate plastics—a solution of cellulose acetobutyrate in suitable solvents, and a special nitrocellulose lacquer formulated to give adhesion without attacking the plastic excessively.

In most formulations, a delicate balance must be achieved in the volatile portion of the coating to attain adequate solvency without unduly attacking the plastic being coated.

It must be remembered, in the case of both cellulose acetate and cellulose acetobutyrate plastics, that since both the plastic itself and the nature and amount of plasticizer may vary considerably, it is advisable to test any otherwise satisfactory finish in the humidity cabinet to establish more definitely its tendency to "behave" on aging.

The above outline covers some of the commonly used plastics. There are many more in use today, and there will undoubtedly be a stream of new plastic products to finish in the future. A thorough discussion of your problem with a progressive manufacturer of surface coatings, followed if necessary by a laboratory application and test on the actual plastic to be used, will inevitably lead to the best finish obtainable.

David M. Flaumenshaft Joins Lacquer & Chemical Corp.

Lacquer & Chemical Corp., 214 Fortieth St., Brooklyn, N.Y., announces that David M. Flaumenshaft has been added to its technical staff. Mr. Flaumenshaft, a chemical engineer, is a graduate of the University of Michigan. He did graduate work in protective coatings and has had considerable experience in the synthetic resin field.

Suite 1819 Bankers Bldg.

Suite 1819 Bankers Bldg.
105 West Adams St.

NEW WRINKLE INC.

CHICAGO 3, ILL.

"The Science of Wrinkle Finishes", a brand new valuable book by W. A. Waldie, technical director of New Wrinkle, Inc., will be available until June 1 at a special pre-publication price of $4.00. Order your copy today; use the convenient coupon below.

New descriptive technical folder, entitled "Making Money with New Wrinkles in Finishing" giving valuable data on where and how to use Wrinkle Finishes, their range of colors and textures, and the new application technique for finishing rough castings, is available on request.

NEW WRINKLE, Inc.,
137 N. Perry St., Dept. W3,
Dayton 2, Ohio.

Gentlemen: Please send me a copy of "The Science of Wrinkle Finishes" at the special pre-publication price of $4.00. My check is enclosed.

Name.....

Address.....

.....

NEW WRINKLE, Inc., 1819 Bankers Building, Chicago 3, Ill.

Gentlemen: Yes, I'd like to have a copy of your new 8-page descriptive folder "Making Money with New Wrinkles in Finishing." I understand there is no charge or obligation.

Name.....Title.....

Address.....

.....

Skillful Spray Finishing Demands Good Training

THE rush of war production taught all industry to be very careful all through their manufacturing operations—up to the painting operation. From that point on it was, "slap on a coat of good paint for protection only, and rush it into the shipping room."

The old spray painting experts had no time to teach their art and skill to younger men—and the younger men went into the Armed Forces where they were taught: "If it moves, salute it; if it doesn't move, pick it up; if you can't pick it up, paint it."

The mixture of wartime and new painting methods, and the loss of the old-timers has thrown us back to the slap-dash method. During the months early this year business hit a slump and many prices were cut. Now we are beginning to realize that eye appeal will help sell new products. Eye appeal means a beautiful paint job, but how can we turn out a good finishing job if our operators do not thoroughly understand the equipment with which they are working?

To prove it to yourself, ask your operators: Can you take the spray-gun apart and put it together again? How do you decide upon the correct operating pressures? Why do you use different nozzles for different operations? Why does our finish show an orange-peel effect?

These are only a few of the questions you can ask, but the answers to these questions will convince you that most of the men—maybe all of them—need "schooling"; if your finish is to help sell your product, it probably will pay you a thousandfold to send your spray operators to school for a week's training in practical application. If not all of your operators, why not send one who can pass on the information to the other men?

Two of the leading spray manufacturers are operating these classes for your convenience. Both advertise in this magazine. Why not take advantage of this excellent service. It will pay large dividends.—W. BEACHAM.

Gilbert Spruance Builds Plant at Winston-Salem

The Gilbert Spruance Co., Philadelphia, Penna., which specializes in the manufacture of quality finishing materials for the furniture trade, has purchased land in Winston-Salem, N.C., on which a building is now being erected.

This first building will be used primarily for the testing and development of new finishes for the furniture manufacturers in that section. It will be equipped with modern facilities for making finishing materials in small batches and will have a complete finishing room manned by expert finishers who will develop colors and quality finishes for the company's customers. This should be of immeasurable benefit to the many plants in the area which are being served by The Gilbert Spruance Co.

During the past few years, this concern had added several buildings and installed new equipment at its main plant. Additional technical and practical men have been added to the firm's personnel.

Ferro Enamel Corporation Promotes Ellery Harris

Ellery Harris who has been associated with Ferro Enamel Corp., Cleveland, Ohio, since 1942 has been appointed Assistant General Manager and Technical Director of the Liquid Plastic Division of the company. This division of the company manufactures baked synthetic enamels and organic industrial finishes under the trade name "Vedoc".

Ellery Harris, now Technical Director of Liquid Plastics Divn. of Ferro Enamel.

STUDEBAKER TRUCK Finish

By J. M. GAUSS

WE ARE ALL looking for speed and economy in production—without sacrificing quality and durability. To accomplish this is not an easy task. Much thought, effort and research are necessary. To arrive at an attractive and durable finish which has all of the desired elements of speed and economy, and still comply with all rigid specifications, requires the coordinated efforts of a concern's organization and the suppliers of equipment and finishing materials. We believe we have attained that kind of finish. Let us consider, for example, the step by step finish on the 1949 Studebaker trucks.

Clean and Rust-Proof Cabs and Bodies

Upon entering the finishing room, truck cabs are transferred to low-wheel trucks, while pick-up bodies are placed on counterbalanced tilt frames also mounted on low trucks.

The first operation is a light brushing with mineral spirits to soften the grease on the surface before cabs and bodies enter the 5-stage washer. Here an alkali cleaner plus an emulsion is sprayed on at 150° F.; then follows a hot water rinse. The next stage is a rust-proofing treatment at 135° F., followed by another hot water rinse; and finally a mild chromic acid rinse at 120° F. The cleaned cabs and bodies pass through a dry-off oven in which moisture is removed at 375° F. Time in washer and dry-off oven is 22 minutes.

Pick-up bodies are mounted on counterbalanced tilt frames so that just outside the exit end of the metal washer they may be tilted to allow the excess water to drain off.

(Continued on page 52)

Head of the Color Laboratory at Studebaker Corporation explains ... spray painting and infra-red baking of bright enamel finish ... cabs and bodies in an air-conditioned room.

Another reason for using the tilt frame is that in the spray booth, the operator can tilt the body to spray the inside. The counter-balance permits one man to easily tilt the body.

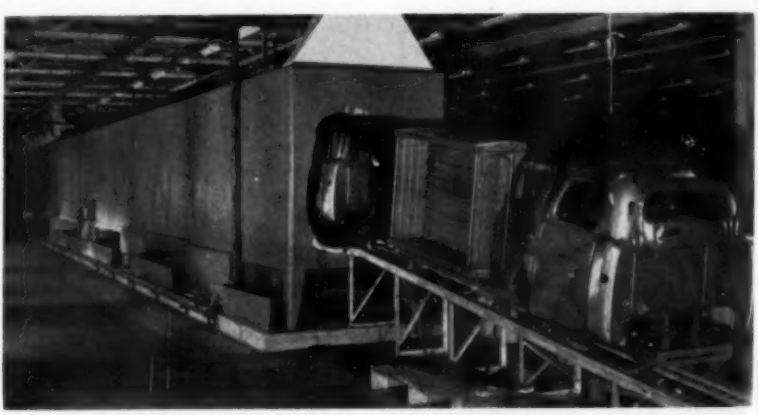
Sound Deadener and Insulation Applied

Just outside the dry-off oven, cabs and bodies are automatically transferred to the floor level finish conveyor which is 450-ft. long, with carriages spaced on 9-ft. 4-in centers. This conveyor operates through a variable speed drive at a speed of 6.3-ft. per minute.

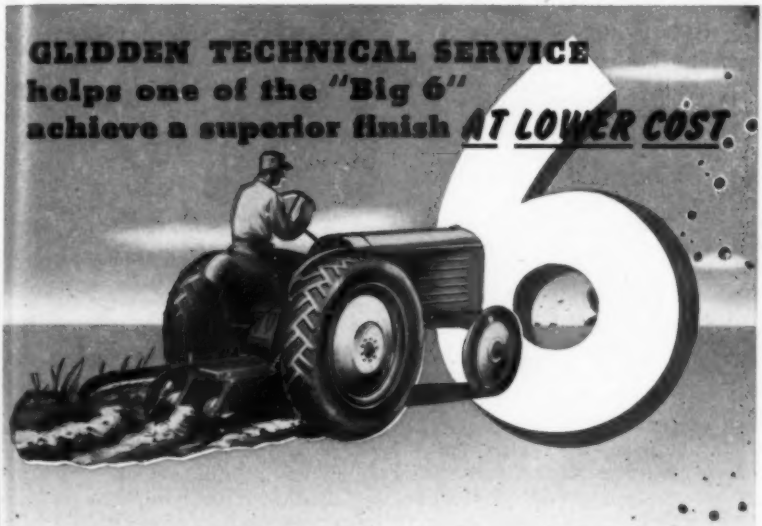
The first operation on this line is to spray a mixture of asphalt and cork on the front of the cowl and over the entire inside of the cab, except the inside of the doors. This material serves as an insulator and sound deadener. Since it is impossible to fully control the overspray from this material, it is necessary to hand wash the outside of the doors and the edges of the curved roof with naphtha to remove deposits from the fine black mist. Cabs are blown dry before they enter a series of six water-curtain spray booths.

Enamel Coats Sprayed in Six Water Wash Booths

In the series of reverse position booths a double wet coat of synthetic enamel is sprayed on cabs and bodies. The viscosity of the enamel varies from 20 to 23 seconds at 78° F., No. 4 Ford cup, according to color. Fluid pressure is 40-lbs.; atomizing pressure is 90-lbs. In booth No. 1 the operator sprays the door jambs on the left side; in booth No. 2 the right-hand door jambs are sprayed. In booth No. 3, the left side of the cab or body is coated and in No. 4 the right-hand



Truck bodies and cabs entering the 5-stage metal washer where they are cleaned, rust-proofed and etched before finishing. The pick-up body on counterbalanced tilt frame is tilted so that cleaning solutions and water will drain off quickly and effectively.



For years, one of the "Big 6" manufacturers of farm machinery had done its own mixing of paste colors and implement varnish. Variations due to different personnel performing this job resulted in lack of uniformity of finish. Rejections were high.

In addition to correcting this condition, the company wanted to improve the general quality of its finish.

Asked for assistance, Glidden Technical Service recommended the use of up-to-date formulations of ready-mixed [illegible] varnishes and detailed coating specifications.

The manufacturer profited by obtaining a superior finish with seven advantages —positive production controls, increased hardness, greater durability, color uniformity, increased mileage and lowered rejections—all at *lower unit cost.*

It will pay *you* to take *your* problem to Glidden. For technical assistance, write:

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Factories and Sales Offices in: Chicago (Nubian Division), Cleveland, Reading, Pa.; Minneapolis, New Orleans, St. Louis, San Francisco. *In Canada:* The Glidden Company Limited, Toronto, Ontario. *Sales Offices in:* Atlanta, Boston, Los Angeles and New York City.

QUALITY Glidden PRODUCTS

TAKE YOUR PROBLEM TO ... Glidden *Industrial Finishes for every purpose*

side is sprayed. In booths No. 5 and 6, the left and right-hand sides are again coated.

Traveling from booths No. 3 to No. 6 affords an appreciable flowout time between coats; and a space of 14-ft. between booth No. 6 and the entrance to the infra-red oven allows slightly more than two minutes for the last wet coat to flash (air) dry before curing.

Enamel Coating Cured in Infra-Red Oven

Truck cabs and bodies are baked for 15 minutes at 280° to 290° F. The infra-red oven is 95-ft. long and has an exhaust canopy at each end, equipped with separate exhaust fans to remove fumes. This arrangement prevents any fumes from escaping into the finishing room.

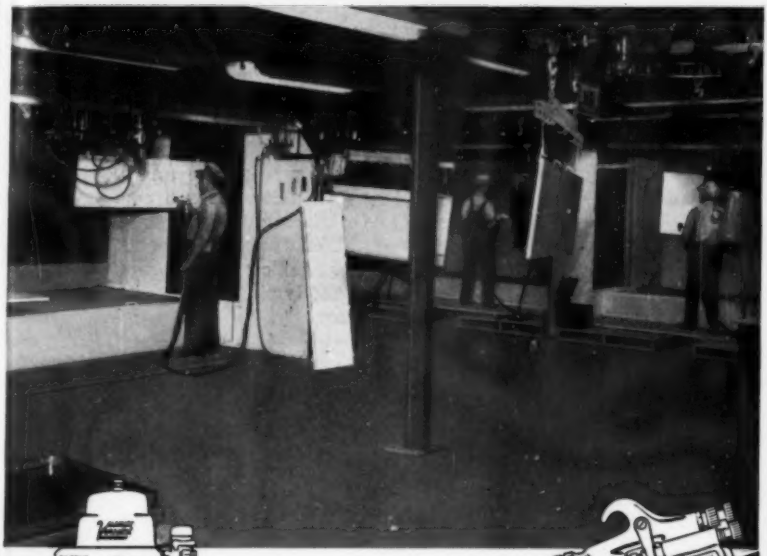
Wide angle, gold plated reflectors and externally controlled (clear) infra-red lamps make it possible to bake the finish satisfactorily on products as large as truck cabs and bodies. Here is where research and experimenting solved the problem in reduction of time and cost of curing the finish.

Truck cabs and bodies vary greatly in contour from the flat, round and cylindrical products commonly baked in this type of oven. The mass of metal varies from the greatest amount around the lower section of the cab to the least on top. In order to get an even distribution of infra-red heat—so as to prevent certain areas from being overbaked while other areas are underbaked—the reflectors are assembled and lamp wattages are varied in such a way that an equal amount of energy is directed onto those surfaces that are positioned at right angles to the lamps, as well as those surfaces that are parallel to them.

With the greatest mass of metal around the bottom of the cab, 500-

The 95-ft. long infra-red oven which is used to bake finish on truck cabs and bodies.

Faster Finishing at Less Cost



Pump and Spray from the Original Containers

1 Air-operated Versatal Pumps dispense materials directly from original drums . . . serve up to 6 spray heads.

2 Hydraulic pressures deliver materials through as much as 1000 feet of hose or pipe.

3 Versatal eliminates "time-out" for material handling and transferring . . . increases output per man hour.

ALEMITE
Versatal
SPRAY-PUMP EQUIPMENT

STEWART WARNER

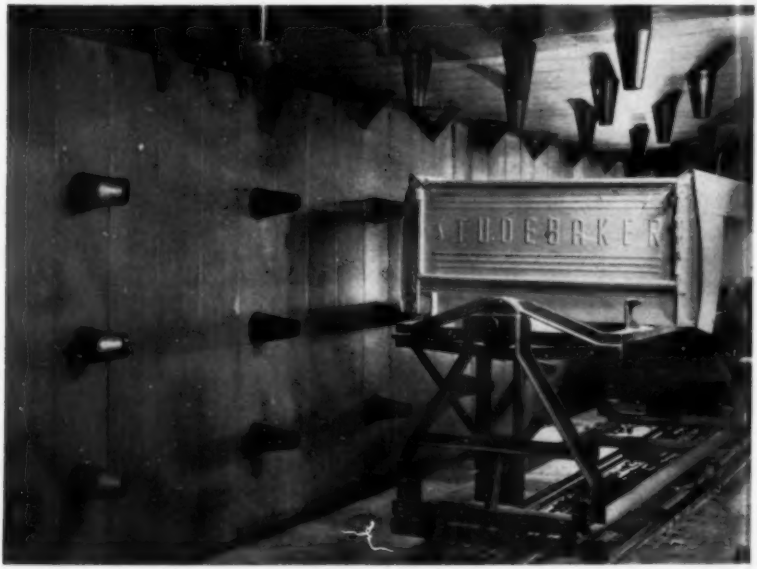
For complete details write Alemite, 1805 W. Diversey Pkwy., Chicago 14, Illinois.

watt lamps are used in the lower sections of the oven—graduating to 125-watt lamps at half voltage around the top.

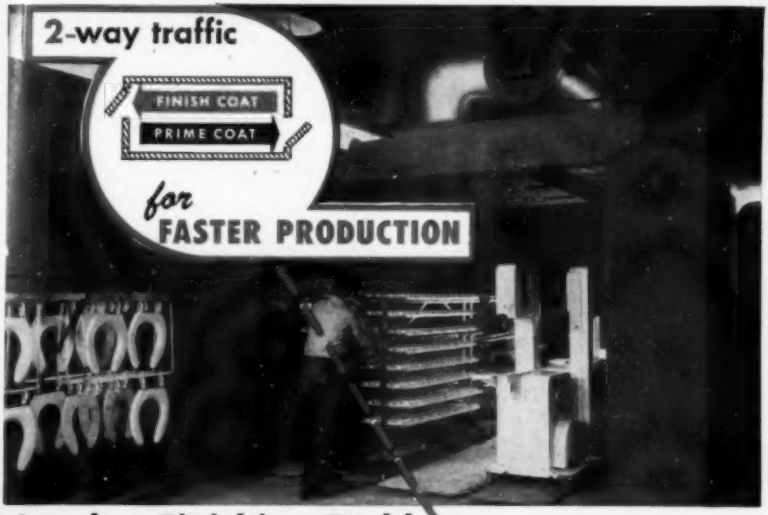
The infra-red oven pulls 304-kw. per hour. There is no recirculation of air in the infra-red tunnel; however, there is adequate exhaust throughout the tunnel to remove all fumes. Another feature of this oven is an automatic control of the lamps by the conveyor. Whenever the conveyor stops, for any reason, an automatic timer starts its cycle. After a short predetermined time delay, during which the oven operates at normal temperature, the voltage is reduced to maintain a low bake temperature. This continues for about five minutes, and if the conveyor has not been restarted, the oven is completely shut down.

Cooling Truck Surfaces After Baking

At the exit end of the infra-red oven there is a 6-ft. space through which truck cabs and bodies pass before they enter a cooling tunnel 44-ft. long. Room air is blown on trucks for seven minutes to cool them sufficiently to permit handling at the transfer point at the exit end. Funnel shaped ducts, pointed in the direction of conveyor travel, pre-



Interior of cooling tunnel where the temperature of truck cabs and bodies is reduced so they can be handled. Notice the funnel-shaped ducts; these are arranged to direct air away from the infra-red oven which is only 6-ft. from the entrance to this tunnel.



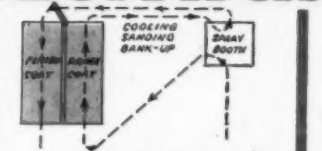
Another Finishing Problem— *Licked* by DESPATCH

Baking prime and finish coats at the same time, on load lines running in opposite directions, this DESPATCH Batch Oven makes "2-way traffic" really pay! Material flow is faster, handling is simplified and per-unit finishing costs kept down.

Large double doors at both ends of oven make "2-way traffic" an easy matter—a typical result of applying 45 years experience to get the right finishing equipment for a customer. This oven offers new convenience in use . . . it saves floor space . . . can handle more production . . . and it assures low operating costs for quality finishes.

WRITE TODAY! Let DESPATCH tackle your finishing problem! We are still breaking records for prompt delivery and can save you delay and expense in providing the right equipment for your finishing needs.

DESPATCH OVEN CO., 615-17S.E. 8th Street, Minneapolis 14, Minn.



DUAL BAKING LINES are handled simultaneously in the Despatch Oven shown above. Products are cleaned and rustproofed in adjacent area, then moved to spray booths for prime and finish coats. Arrows show production flow.

High speed forced convection heat assures rapid, uniform baking of capacity loads. It is ideal for all finishes and guarantees high quality results with maximum economy.

DESPATCH OVEN COMPANY

Complete FINISHING SYSTEMS or Separate Ovens
BAKE OVENS • DRYERS • AIR CONDITIONERS
RUSTPROOFERS • SPRAY BOOTHS • WASHERS
FLOW COATERS • CONVEYORS

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vent any air from being blown into the oven which is only 6-ft. away. Exhaust fans on top of the cooling tunnel aid in reducing temperature of the metal.

Room Is Pressurized and Air Conditioned

Some of you may wonder how this reduction of temperature is possible in a distance of only 44-ft., and in so short a space of time. Well, the entire finishing room is pressurized and air conditioned. A temperature of 75° F., with a relative humidity of 50% of saturation, is maintained throughout the year. All air is filtered, and it is changed from 8 to 12 times an hour.

Final Inspection and Repair Finishing

Inspection is made at the transfer point where truck cabs and bodies leave the finishing conveyor to go to assembly. A second inspection is made at the end of the assembly line. Any trucks on which the finish is damaged are returned to the repair line.

For repair finishing there are two sets of double water-curtain spray booths and two infra-red ovens. One set is for the undercoat, the other for the top coat. In this repair line the infra-red oven lamps are controlled in rows of two sections lengthwise the oven. This is done so that heat may be applied only to the section of the truck where repairs are made. For repairs, a synthetic enamel is used to which some clear material is added on account of the comparatively low baking temperature.

(Continued in a future issue)

Black Arrow Moves to Parkton, Md.

The Black Arrow Lines of paint spray equipment are now being produced at The Black Mfg. Co.'s newly constructed plant at Parkton, Md., 25 miles north of Baltimore.

Utilizing modern construction and layout, the new factory's greater space and expanded facilities meet growing production needs.

The Black Arrow Paint Spray Line features hollow air spray guns and includes spray booths, air compressors, pressure tanks, air conditioners, exhaust units and all accessories.

Allerton Chemical Co. Organized by Robert A. Prisch

Robert A. Prisch, formerly a sales development engineer with the Merrimac Mass. Division of a large concern, has organized the Allerton Chemical Co. to manufacture industrial surface coatings in Rochester, N.Y. The new company, located at 116 Humboldt St., in Rochester, makes and sells lacquers, synthetics, air dry and baked enamels and other finishes for the industrial coatings field. Mr. Prisch is a graduate of the Cornell University mechanical engineering school.

Hall Sales Representative for George Koch Sons

Ernest B. Hall has been appointed industrial sales representative in the Chicago area for Geo. Koch Sons, Inc., of Evansville, Ind., as announced by R. M. Koch, general manager of the company.

Ernest B. Hall now represents George Koch Sons in Chicago area.

The Koch firm manufactures complete finishing systems, the DeBurgh conveyor, spray booths, ovens, metal washing and surface preparation equipment.

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Pearl Essence

What Pearl Essence is, how it is mixed with finishing lacquer, the technique of applying pearl lacquer to various products by dipping and spraying, and how to get those colorful lustrous metallic effects on the surfaces of so many new and attractive articles we see in fashionable stores today.

By Helen Mattin

ALTHOUGH PEARL essence has been used in the United States as a decorative finish since the first World War, its composition is not widely known. It is an 11% suspension in lacquer of the guanine crystals obtained from herring scales. The lacquer base most commonly used with the guanine crystals is a solution of 20 to 30 second nitrocellulose dissolved in amyl or butyl acetate. This paste should be clean, non-yellowing and anhydrous.

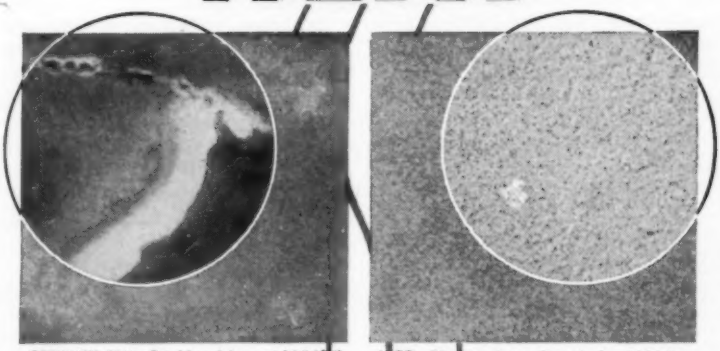
Pearl Essence Is Mixed Into Pearl Lacquer

Before it can be used the paste must be made into pearl lacquer. This is done by mixing an average of 5% of the paste with a lacquer containing a large amount of active solvents, as the high viscosity base of pearl essence is incompatible with lacquer containing a high proportion of diluents.

For best results, the lacquer should be gradually added to the essence in small increments, and stirred until the mixture is smooth before adding each additional portion. After the mixture becomes a smooth thin paste the balance of the lacquer can be added fairly rapidly, and stirred until it is thoroughly mixed. The use for which the pearl lacquer is intended determines the amount of thinner to be added at this point. Two precautions should be observed: Pearl es-

MICO SILICONE-BASE FINISH SOLVES YOUR FINISHING PROBLEM WHEREVER THERE IS

HEAT



ORDINARY FILM—Total breakdown at 1000°F) MICO—Film integrity unaffected after 1000 hrs.

In this dramatic test by a nationally known laboratory the steel plate at the left was coated with ordinary heat-resisting material, while the one at the right was coated with MICO Aluminum. Both were then subjected to 1000° heat. As the unretouched enlarged sections show, the ordinary film completely broke down after only one hour. But MICO held up without signs of deterioration and was still going strong *after 1000 hours!* What further proof of MICO'S amazing durability! MICO can protect YOUR product, too, *wherever there is heat!* Investigate MICO today!

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sence should never be added directly to the thinner, as this will make the mixture "grainy"; and the mixture should never be stirred vigorously or rapidly, as this will tend to break the guanine crystals and make them less lustrous.

When pearl essence is to be used in plastics it is compounded in an entirely different base, as the nitrocellulose base ordinarily used is incompatible with such materials as methacrylate and polystyrene plastics, and will yellow them. For use in these materials, the guanine crystals are suspended in bases the chief ingredient of which is the particular plastic in which it is to be used.

"Synthetics" are not usually compatible with the ordinary types of pearl essence, but specially devised types of pearl essence are available for use with some of the present day alkyd formulations.

What Makes the Luster in Pearl Essence Finish

The high luster and depth of light of a pearl essence finish is produced by the multiple reflections from the layers of guanine crystals. The maximum reflection is obtained by aligning the crystals on their flat surfaces in a single direction, rather than having them scattered haphazardly over the surface or embedded on edge. This alignment, or orientation, is best obtained by a dipping process which allows the lacquer to flow evenly over the surface. A lacquer made with a slow evaporating solvent like amyl acetate should be used, as a quick-drying thinner would curtail the flow.

Dip Coating Is Desirable Whenever Possible

The dipping process should be employed whenever the shape of the object makes it possible. In general, small objects of all shapes, as well as long narrow objects of any size can be dipped. Other shapes, if confined to small sizes, can also be handled in this manner.

The best and most widely used example of dipping is the manufacture of simulated pearls. For this process, the nitrocellulose used in the lacquer mixed with the essence should range from 25 to 75 seconds. The best solvent to use is amyl acetate. If plastic beads are used, the pearl lacquer should contain no solvent that might attack the plastic. For glass beads no such precaution is necessary. Both kinds of beads can be either string-dipped or single-dipped.

In single-dipping, each bead is mounted on a toothpick, several hundred of which are set in a board. The board is slowly lowered until the beads are immersed in a pearl lacquer solution which has a viscosity of 1000 to 1200 centipoises. The rack is then raised very slowly; the beads are withdrawn from the lacquer and tapped off lightly on a clean piece of paper, and the board is then slowly revolved until the beads are dry.

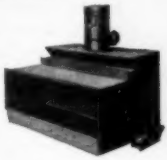
String Dipping Beads in Pearl Lacquer

In string-dipping, the string of pearls must first be dipped into a pre-coat to size the string so as to prevent the lacquer from soaking into it. The pre-coat also acts as a glue to prevent the beads from

AIR AND ELECTRIC-MOTOR AGITATORS

The Binks line includes 5 different styles of air-motor agitators for mixing paint in shipping drums. There is also a laboratory model for mixing small quantities. Air motor speed is adjustable from 15 to 90 r.p.m. Air and electric motors, of approved type, are also available for keeping the contents of material tanks in suspension.

BINKS DYNAPRECIPITOR AND DRY TYPE BOOTHS



There are 510 different sizes and styles included in the Binks line of spray booths . . . from the ultra-efficient Dynaprecipitor water wash spray booth to all sizes of bench and dry-floor type booths. There's a size for every purpose, from hairpins to railway coaches and airplanes. Write for a copy of Binks Bulletin No. 500 that describes the Dynaprecipitor principle.

BINKS AIR COMPRESSORS

Binks air compressors have been particularly developed for spray painting . . . for the economical production of air in large volume at moderate pressure. There is a range of 24 different portable and stationary models to choose from in electric motor and gasoline-engine driven styles. Both single and two-stage compressors are included in the Binks line.

EXHAUST AND MATERIAL HANDLING SYSTEMS

Binks engineers are specialists in the design of exhaust systems and material handling equipment. A lot of spray finishing woes are directly traceable to an improper volume or velocity of air. There are many angles to handling materials and parts mechanically; the right one can save you a lot of money. Binks engineers are available for consultation without obligation, at your request.

AUTOMATIC FINISHING

Many industries can improve production and lower costs by the use of automatic finishing. Binks has consistently led in the development of automatic spray finishing machines for flat ware and many special types of products. If you're interested in cutting finishing costs, write to Binks . . . there's no cost or obligation for this service.

SPRAY PAINTING ACCESSORIES

Naturally—the complete Binks line of spray painting equipment includes a full assortment of spray painting accessories, such as air and material hose, standard and quick-detachable connections, turntables . . . *everything* you need, and all from a single source, which simplifies your purchasing. Standardize with Binks . . . save your time and money.

"If there is any spray painting equipment that would help you do a better job . . . and which we do not make . . . please tell us."

J. E. Roche

Chairman of the Board

Binks MANUFACTURING COMPANY

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NEW YORK DETROIT LOS ANGELES ATLANTA BOSTON CLEVELAND DALLAS MILWAUKEE NASHVILLE PHILADELPHIA PITTSBURGH ST. LOUIS SAN FRANCISCO SEATTLE WINDSOR, ONTARIO, CANADA

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slipping and sliding together before the lacquer dries. This pre-coat must resist attack by the solvent in the lacquer or its effect will be negated.

The string of beads is then dipped into a solution similar to that used in single dipping, but of a much lower viscosity, from 200 to 300 centipoises. The string is withdrawn, rotated and dried in a manner identical with that used in single-dipping. Best results are obtained by using many thin coats, usually six, rather than a few thick coats.

Technique of Spraying Pearl Lacquer

Pearl essence, of course, is widely applied by spraying. Suitable solvents and a clean spray gun should be used, and the surface to be coated must be clean and dry. Pearl essence can be sprayed on wood, cloth, paper, glass, metal, plastics and leather, if the base is properly prepared. The spray coating should be wet enough for the lacquer to flow, but not wet enough to run. High atomizing pressure in spraying will cause the lacquer to merge with the base coat, obscuring its brilliance, therefore low air pressure should be used to spray a fairly thin lacquer, and the spray gun should be held about 12-in. from the surface, using a fanning motion on a flat surface.

Tumbling is not advisable as a method of application. The tumbling motion will break the guanine crystals and the usual smooth lustrous finish will not be evident.

No special precautions are needed in handling pearl essence—that is none beyond those observed with ordinary lacquer—as the crystals are non-corrosive, non-toxic and inert. Although it has no action on containers, it is advisable to store pearl essence in glass, aluminum or stainless steel containers; atmospheric rust, dropping into the essence from tin or steel containers, will mar the finish when the lacquer is applied. Pearl essence will keep indefinitely at any reasonable temperature.

Adding Color Effects to Pearl Essence Finish

Any number of color effects can be achieved by different methods of application. Color* can be added to the pearl lacquer itself, or a colored lacquer can be applied over the pearl lacquer. Pearl lacquer can be applied over a colored base lacquer enamel, or a colored pearl lacquer can be applied over a white lacquer base. A colored pearl lacquer applied over a differently colored lacquer base, for example, yellow pearl lacquer over a blue base would give an unusual green.

A transparent colored lacquer over a pearl lacquer gives a high gloss of unusual depth. During the war, when the use of bronze was restricted, its effect was simulated by using a chocolate brown base with a thin gold colored pearl lacquer over it, and as a top coat, a faintly yellow transparent perspiration proof lacquer.

Pearl finishes are adaptable to products used from the cradle to the grave. Baby rattles, baby toys and wooden dolls are dipped in

*When the term "color" is used it means a filtered solution of a dyestuff in a solvent that is tolerated by nitrocellulose.

"Hey . . . I'm in a hurry!
I don't need this extra coat!"

Remember—
a
"fresh viewpoint"
often
works wonders!

Do you have a finishing problem that's throwing a "monkey wrench" into production?

Why not let Unichrome engineers "take hold" — bring a fresh viewpoint to bear on your problem?

Some of their imagination and out-of-the-rut thinking is just what many finishing problems need.

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LACQUERS, SYNTHETICS, BAKING ENAMELS

Products of the Organic Coatings Division of UNITED CHROMIUM, Incorporated
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pearl lacquer; caskets are sprayed with pearl lacquer for either a natural pearl effect or over colors to produce a gun metal or bronze color.

Pearl finishes are used extensively on sporting goods. Both plastic and wood fishing lures are finished in color to resemble the natural bait, and then dipped in pearl, over which a clear glossy water-resistant top coat is applied. Fishing rods and golf clubs are also dipped in colored lacquer and then in pearl, usually to give a gun metal effect. Pencils printed with a firm name and slogan, and then dipped in pearl, make effective and attractive advertising devices.

Artificial flowers of all kinds are dipped in pearl lacquer. One unique use of pearl lacquer in this industry is the manufacture of "fishskin". A wire is shaped into a petal or leaf and dipped into a "bridging" lacquer which forms a film across the loop. The bridges can be formed over loops as large as 7 to 8-in. wide, and can be made either smooth or wrinkled. The loops are then dipped in a coat of gelatin, then in water solution of dye, and finally in pearl lacquer. The individual shapes are formed into flowers and plants.

Metallic Finishes Produced with Pearl Lacquer

Many industrial users spray their products with pearl lacquer. An occasional automobile for show purposes, or as a special job, is sprayed with pearl lacquer. Hollywood uses pearl lacquer on sets for lavish musicals. The new "metallic finishes" which became popular for women's shoes this year are achieved by spraying the leather with a colored lacquer, then a colored pearl lacquer and finally a clear lacquer. To keep the leather flexible large quantities of plasticizer are used. The correct type of plasticizer will be soaked up by the leather instead of leaving a film too soft for service.

Statuettes, ash trays, lamps, book ends and other art goods are sprayed to give either pearl finishes or simulated metal effects. Brushing a japan over the white pearl and then wiping it off the high spots creates a nice patina effect.

For Costume Jewelry and Vanity Cases, Etc.

While small pieces of costume jewelry of suitable shapes are dipped, much jewelry is sprayed. Metal pieces are lacquer enameled before being pearled; plastic pieces are pearled directly. Designs are sometimes made on pieces like vanity cases by spraying with a colored lacquer base, then covering the surface with a mask in which the desired design has been cut, and spraying with pearl.

Designs can also be made by pasting tape on the surface, in the shape of the design, then removing the tape after the surface has been sprayed with pearl lacquer. The nailheads currently used by the millinery and dress industries on turbans, belts and other costume effects, are prepared by spraying transparent colored lacquer of high solids content over the pearl lacquer to give a high gloss.

Pearl essence lacquer is applied by brushing in only two instances. In the millinery industry, feathers

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are dyed and then pearl lacquer is brushed on them. Opalescent nail polish, which contains pearl essence, is brushed on.

Also for Coating Flat Cloth and Paper

Pearl lacquer is applied to cloth and paper with a doctor blade, as well as by spraying. When the blade is to be used the cloth is coated with several layers of white lacquer until it is fully covered; then a coat of high viscosity clear lacquer is spread on as an insulating coat, and over this one or more coats of pearl lacquer.

Textile printers have been able to achieve unusual effects with lacquer finishes containing pearl essence, and these may be more widely used in the garment industry, as the laundering and dry cleaning methods become more efficient.

Genuine pearl essence cannot be duplicated successfully. The attempted imitations on the market are of a noticeably inferior quality. Although pearl essence is manufactured throughout the world, American pearl essence, considered the best, is still in great demand wherever fine finishes are required, despite the present dollar shortage.

John J. Heins Becomes Division of H. Behlen & Bro., Inc.

In April of this year, John J. Heins of Hudson, N.Y., sold his entire gold size and burnishing clay business to H. Behlen & Bro., Inc., of New York City and Santa Monica, Calif. This transaction included all special processing equipment and machinery, raw materials, and formulas which had been developed and improved since 1841, the year the company was founded in London, England.

Three generations of the Heins family, all named John, have devoted their entire lives to the making of these gilding specialties by using the same refining and kettle boiling methods, achieving thereby the standard of comparison for over 100 years.

In 1879, The American Institute awarded to John J. Heins the gold medal prize for superior excellence of quality of its products, a most enviable position with reference to quality which has been maintained to this day. There is no necessity to use imported gold sizes or clays, because the Heins formulations were originated in England and were based upon all the foreign knowledge and skill of the day.

When the original John J. Heins Co. moved from London to the U.S.A. in 1876, the first American establishment was set up at Center St., New York City. It was here that the formulations were processed into the now famous Heins gilding materials.

This business in New York City was carried on by the founder's son whose son, in turn, eventually moved the entire business to Hudson, N.Y. Here a complete factory was set up for the manufacture and continuation of Heins products. The art of making superior gilding clays and size has not been lost. H. Behlen & Bro., Inc., will continue to produce all the Heins products under the personal supervision of John Heins at its factory in Kearny, N.J.

Tomes Now Sales Manager of Valdura Division, A-M Co.

Austen F. Tomes has been appointed sales manager of the Valdura Division of American-Marietta Co., Chicago paint manufacturer, according to Grover M. Hermann, president.

Austen F. Tomes Appointed Sales Manager of the Valdura Division of A-M Co., Chicago

In the paint business since 1927, Tomes was eastern sales manager for another manufacturer of finishing materials for the past two years. Previously he was general field manager of the maintenance division of a firm in New York for eight years.

s got you up in the air?

PREPOSTEROUS PLIGHT? Of course it is. But today's sky-high costs have a good many production men *feeling* as though they're taking a balloon ride.

If you're looking for a way to get *your* manufacturing costs back down to earth, maybe this is the time to take a long, hard look at your finishing methods and materials. You'll discover that there is a lot more to finishing costs than the price per gallon of the finish you use . . . that, in fact, finishing costs play a big part in your *total* end-cost picture.

Consider individually the factors involved in your finishing process—drying time, storage space, labor costs, percentage of rejects, and packaging operations. In many cases, these "costs" can be reduced right down the line through the use of the *right* finish, *correctly* applied.

If you want expert help in effecting finishing economies, call on Du Pont. Today, thousands of pre-tested formulas under the trade names of "Duco" and "Dulux" are helping to keep manufacturers' end costs at a minimum.

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. or a tough technical
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Drying Behavior of VARNISHES ON WOOD

By Rollin H. Wampler

Author of Modern Organic Finishes

First section of a two-part article that takes up the use of varnishes on wood surfaces. In this part the writer tells what varnishes are made of, why and how varnish films dry, and what effect solvents and driers have on modern varnish films.

IN SPITE of the many inroads of lacquers and all thermosetting (heat-curing) finishes, varnishes are still used in great volume in production wood finishing. They are used on household and outdoor furniture, sporting goods such as baseball bats and skis, architectural assemblies such as screen doors, and a thousand and one other industrial wood products. Since fast, thorough drying of varnishes is a problem of great concern to the industrial wood finisher, this problem is the topic of the discussion that follows.

For a thorough understanding of the drying of varnishes the finisher must know something of the composition of these materials. Varnishes may be roughly grouped into two classes: 1) the oleoresinous type, and 2) the newer synthetic polyester type.

The first varnishes were made by heating hard, brittle natural resins to a point where they were oil-soluble, or compatible with the drying oils. Then drying oils were added and the whole mass was heated to a point where it could be thinned with the necessary solvents to have the proper viscosity for application. Heating increased the viscosity of the oil-resin complex. The primary object of this heating was not for the sake of the economy, as it

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might seem at first thought, but to increase the drying speed and durability.

The thicker or heavier the oil-resin base, the faster the drying and the greater the durability, within reasonable limits. While cooking the oil-resin base, predetermined amounts of carefully selected metal salts were added to accelerate the drying of the oil. Then, when the oil-resin base was cooked to the proper point, solvents were added. After cooling, aging, and filtering, the varnish was ready for use.

Oleoresinous varnishes today are made largely on the same principles, but with important differences. The hard resins used are now largely synthetic in nature, and require no special heat treatment for solubilizing them in drying oils. The hard resins and drying oils are charged into the kettle at the same time and heated to the proper point. A great variety of hard varnish resins are available.

Drying Oils and Thinners for Varnishes

Drying oil technology has produced greatly improved drying oils, so that the raw oils are being used less and less in varnish cooking. A further modification has been that metallic salts are seldom cooked into the base, but are added on the down-heat or even cold in the form of soaps (combinations of metals with fatty acids).

Finally, modern varnish thinners are greatly improved in quality and increased in number so that turpentine, as the sole thinner, has been replaced by a carefully balanced mixture of almost as many different solvents as will be found in a typical lacquer.

Polyester Varnishes; Alkyds, Etc.

The newer polyester varnishes are esters of monobasic drying oil fatty acids, dibasic acids, and polyhydric alcohols. A generic term for these materials is "alkyds". The drying oils are essentially neutral esters of fatty acids and glycerine. In alkyd manufacture the usual procedure is to treat the drying oil or oils with glycerine under heat to form what is essentially a monoglyceride. The process is called alcoholysis.

Since one molecule of glycerine will normally combine chemically with three molecules of monobasic fatty acids, the process leaves the monoglyceride capable of combining with a single molecule of a dibasic acid. The usual dibasic acid employed is phthalic acid, or phthalic anhydried, which is the acid with a molecule of water removed. This then is a greatly simplified and therefore somewhat inaccurate picture of alkyd composition: One molecule of glycerine combined with one molecule of phthalic anhydride and one of drying oil fatty acid.

In practice, other polyhydric alcohols than glycerine are often used, such as glycols, pentaerythritol, mannitol, and sorbitol. An excess of drying oil may be used for practical consideration. Hard resins may be added. Other dibasic acids than phthalic are often used.

The polyester base is processed to the proper point and thinners

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and driers are added as in any of the oleoresinous varnishes.

Drying Oils Influence Performance of Varnish

Important considerations in the drying and performance of varnishes are the kinds and amounts of drying oils used. Tung oil is one of the fastest-drying oils, but its use is limited largely to oleoresinous types. Dehydrated castor oil, oiticica oil, linseed oil, soya bean oil, modified fish oils, and many others are used in both types.

The amount of oil is an important consideration in any varnish. In the oleoresinous group, it is expressed as the amount of oil in gallons per 100-lbs. of hard resin. Thus, furniture varnishes may vary in oil-length from 5 to 15 or 20 gallons. Floor varnishes may run from 20 to 30 gallons. Spar type varnishes and enamel liquids may run from 30 to 100 gallons.

In polyester varnishes the oil length is usually expressed as the percentage of the fatty acid-glycerine combination of the base. The phthalic glyceride portion may be regarded as hard resin. On this basis, a 50% oil length alkyd is equivalent in composition to an oleoresinous varnish containing about 12 gallons of oil to 100-lbs. of hard resin. In performance, however, such an alkyd is comparable to a spar type of oleoresinous varnish. This relation is very rough, and except for a picture of composition should not be the basis of deductions about performance.

Enamels for industrial use are essentially varnishes with pigments ground into them. Since the pigment acts as an inert ingredient, the longer oil varnishes are used for enamel liquids because of the "shortening" or embrittling effects of pigments.

What Occurs When a Varnish Film Dries

With this general picture of varnish composition in mind, we are ready to consider the mechanism of drying. When a varnish is applied, three more or less overlapping processes occur. *The first is solvent evaporation. As the solvent evaporates, the film becomes thinner in dimension because of the volume loss, and its viscosity increases until it finally sets, or ceases to flow.* Where the film was formerly a thin liquid, it is now a thick, plastic, and sticky base.

The two remaining processes occur more or less simultaneously. The conjugated double bonds in the unsaturated (drying oil) portion absorb oxygen from the air. Depending upon the composition of the material and the drying conditions, polymerization occurs by combination of the molecules by cross-linkages into larger units.

The net effect of the oxidation and polymerization is to convert the semi-solid, sticky film into a hard, tack-free film which is now considered to be dry.

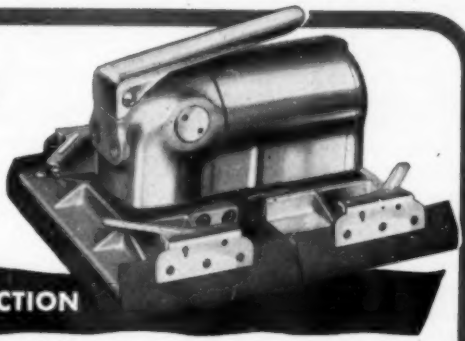
What Causes Failure of Dry Varnish Film

Eventual deterioration of a dry varnish film may result from a great many things, such as mechanical wear, exposure to actinic light (sunlight or untra-violet light), heat, salts, soaps, solvents, mois-

National Air Sanders

MODEL 300

Weighs 5½ lbs.



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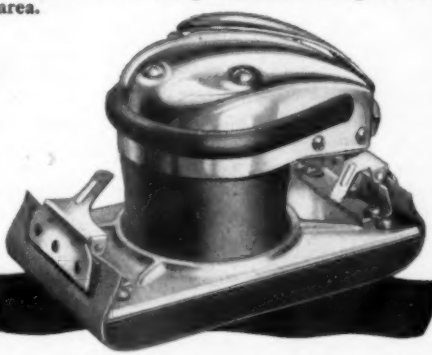
For a perfect finish without swirls, circles, or gouges, use the straight-line, Model 300 National Air Sander. It will save time in filling, sealing and rubbing. Makes 2000 ¾"-strokes per pad per minute . . . requires 60 to 100 lbs. air pressure . . . has up to 50 sq. in. of abrasive area.

MODEL 400

Weighs 4 lbs.



ORBITAL ACTION

Even on small, narrow, and irregular pieces, the Model 400 will save time and energy and give you a much better finish. It is fast (up to 6000 r.p.m.) . . . has an abrasive area of 25 sq. in. . . . and is powerful and vibrationless. Write the factory for further details today.

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NATIONAL AIR SANDER, INC., Rockford, Ill.

ture, and expansion and contraction of the substrate. But where these factors play little part, oxidation may continue to a point where the film crumbles, depending somewhat upon the oil length. Since oxygen normally affects only the drying oil or unsaturated portion of the varnish, it is obvious that the less oil in the film, the less is the deterioriation by oxygen.

Also, polymerization by heat or baking has a tendency to break the double bonds and form cross-linkages at these points. These double bonds would ordinarily absorb oxygen. That is one reason for the greater durability of baked finishes, since oxygen deterioriation upon aging is less, and less drier is required to form a hard durable film.

Factors That Affect Durability of Varnish

From these considerations certain valid conclusions may be drawn. The greater the degree of polymerization in the base (the thicker or heavier the viscosity), the less the degree of oxygen deteriorization by age. Varnishes high in viscosity usually exhibit greater durability than thin materials.

Baked varnishes have greater durability than air-dried varnishes because, in the former case, polymerization has a more important role. The less drier used, the less the deterioration by oxygen, and the better the aging properties. Another important conclusion is that the higher viscosity varnishes dry faster than thinner ones (of the same film thickness) because a portion of the polymerization that would normally occur in the drying film has already occurred in the manufacture of the varnish.

It should be emphasized that while these conclusions are valid, the picture of drying I have given is slightly inaccurate in some details. The mechanism of drying we have pictured is simplied in the interests of brevity.

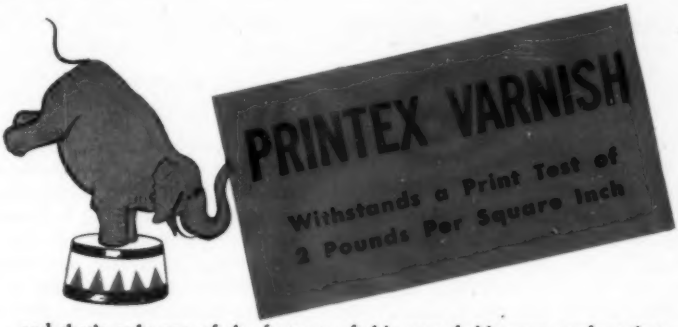
Solvents for Varnishes Have Important Role

The solvents used in varnishes have an important influence on the drying properties. A solvent combination that is too slow in evaporating or too strong will cause sags and runs on vertical surfaces. One that is too fast will cause too-rapid setting and will orange-peel when it is sprayed.

A solvent combination that is proper for one base may be entirely unsuitable for another. Mineral spirits is the major solvent in most varnishes. This is a petroleum solvent boiling in the range of about 300° to 400° F. This solvent is slow enough for almost any varnish, and too slow for some.

Evaporation Rate and Solvency of Solvents

A faster-evaporating solvent is V M & P naphtha, another petroleum solvent often used with mineral spirits. These solvents are too weak for some varnishes, particularly short alkyds. They may be fortified with turpentine, dipentine, or a coal-tar solvent such as high-flash naphtha or xylol. Short alkyds are often thinned with xylol alone, or with a high-solvency petroleum solvent containing some aromatics (coal-tar type solvents). [*To p. 82*]



. . . and that's only one of the features of this remarkable new product that *combines the major qualities of lacquer and furniture varnish.*

Printex varnish is the result of long and exacting research at the Reliance laboratories . . . proved in large scale production for more than a year. Read these other Printex features then send for at least a trial order . . . today.

- Varnish solids—lacquer speed.
- One coat has body of 2 lacquer coats.
- Sets out of dust in 15 minutes.
- Air dries to rub or pack in 16 hours.
- Force dries in 1½ hours at 125°-140°F.
- Can be rubbed as soon as cool.
- Clear, transparent—no blushing or blooming.
- Saves time and labor.
- Water and alcohol resistant.
- Sprays easily, smoothly and quickly.
- Does not settle in package.
- Supplied in gloss or dull lusters.

For additional information address 4734 Crittenden Dr., Louisville, Ky.

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The evaporation rate and solvency are two important characteristics of a varnish solvent. Fast, weak solvents go for rapid setting. *Slow weak solvents tend to remain in the film longer than slow, strong solvents, and are more likely to retard through drying and cause printing.*

In industrial varnishes the fastest practicable solvents of satisfactory strength are used to promote rapid setting, since the longer the film remains wet, the more dirt it will collect. But where penetrating types of varnishes are used on wood products, the solvent must be slow enough to permit complete absorption of the material into the wood. If the material is not desired to penetrate, then the fastest practicable solvent will give good hold-out.

It might be mentioned also that faster solvents permit heavier coats on vertical surfaces without sagging, so that one-coat furniture varnishes usually contain a fair proportion of fast materials. This reduces coverage, or spreading rate, of course, but it does permit satisfactory one-coat finishes over sealer on some types of furniture.

The evaporating rate of a solvent is related to the boiling point, or the boiling range. A more accurate measure is the vapor pressure, or the average vapor pressure of a mixture of solvents. The higher the vapor pressure, the faster the evaporation. A still better index is the actual evaporation rate measured under carefully controlled conditions. But the solvent retention of the varnish base influences the evaporation rate of the solvent, so that careful measurements of the evaporation rate of a free solvent do not give the whole story.

"Wet-on-Wet" Coats of Varnish Don't Dry

In general, most varnish solvents are comparatively weak in solvent power as compared to lacquer solvents, so that while wet-on-wet systems of lacquer will air-dry well, wet-on-wet varnish systems will not. While this is partly a result of the drying action of the oils, it is due in some part to the poorer ability of varnish solvents to diffuse out into the air through thick films.

Driers have no known influence on the evaporation rates of solvents from a varnish film. But they do have a valuable accelerating effect on polymerization and oxidation. Soaps of cobalt cause rapid surface oxidation. Lead soaps promote hard through drying. Manganese soaps have an intermediate effect. Calcium is preferred over lead for some types of varnishes. For example, lead soaps may react with alkyds to form lead phthalate, which precipitates out as an insoluble cloud, causing seeding or specks in the film and loss of drying power. Calcium may be used in such cases, and seems especially good with pentaerythritol esters. Zinc tends to promote thorough drying by holding the film "open" or wet longer, and retarding the setting time.

Much that is known about driers is highly speculative in nature. It seems certain that the more highly dispersed and the more soluble they are, the more effectively they act. Beyond a few other such facts, well

known to varnish technologists, much about the behavior of driers is not completely understood.

Some pigments tend to absorb driers upon aging. Carbon black is an example. Therefore some well-aged enamels may require the addition of small amounts of liquid driers just prior to use. Some clear varnishes tend to lose drying power with age, due probably to loss of drier solubility; or to the escape of minute quantities of free phenol from phenolic varnishes.

END OF PART I.

Graph on chart of Bristol Recorder indicates temperature in relation to time, as it is conveyed with the painted motorcycle fenders through a baking oven in enameling department of Harley-Davidson Motor Co. at Milwaukee, Wisc. The instrument permits accurate adjustment of temperature, which is so vital for uniform baking of enameled motorcycle parts.

Black Mfg. Co. Appoints Parke Co. as Distributor

Announcement is made by the Black Mfg. Co., Parkton, Md., of the appointment of the H. B. Parke Co., Pittsburgh, Penna., as factory representative for the Black Arrow Line of industrial paint spray and welding equipment in Western Pennsylvania and West Virginia.

Harry F. Schaefer, Schaefer Varnish Executive, Dies

Harry F. Schaefer, founder and general manager of the Schaefer Varnish Co., Louisville, Ky., died Thursday evening, April 14, after a short illness. Mr. Schaefer, who was 69 years of age, returned to his offices about two weeks ago after spending several weeks in Florida. He developed leukemia.

Mr. Schaefer is survived by his widow, Mrs. Charlotte F. Schaefer, and a son, Ralph F. Schaefer.

In 1926 Mr. Schaefer withdrew from Sun Varnish Co., and formed his own company. In 1932 Thomas F. McGuire joined Schaefer in reorganization. In 1934 they took over the former Sun Varnish Co. plant and moved into it.

Joseph H. Harris Joins Atlas Powder Co.

Joseph H. Harris has been appointed manager of Customer Service at the North Chicago, Ill. branch of the Industrial Finish Department, Atlas Powder Co.

Joseph H. Harris becomes Manager of Customer Service for N. Chicago branch of Atlas Powder Co.

Mr. Harris, who was formerly with two other large manufacturers of finishing materials, will be in charge of the Customer Service Group operating out of the North Chicago plant. The prime function of this group is to assist Atlas Powder Co. customers in all phases of their finishing problems, in the field and in the preparation of proper laboratory tests.

Who Makes Solvent Stills?

In April issue, in an editorial entitled, "More Ways to Stop Costly Wastage", page 120, you mention a solvent still. Could you please send us names of manufacturers of these solvent stills?—S.S.Co.

According to our card index, the following concerns make and sell solvent stills: Vulcan Copper & Supply Co., Cincinnati, Ohio; Buffalo Foundry & Machine Co., Buffalo, N.Y.—ED.

Pressure Sensitive Labels

In the February 1949 issue of INDUSTRIAL FINISHING, on page 4, there is an item regarding labels that are pressure sensitive. We would appreciate your advising us the name of the manufacturer of these labels.—T.A.Co.

Try Wiggins Mfg. Divn., Dept. B-1, Norwood, Mass.—ED.

Mirr-O-Mist in Canada

We notice on pages 80 and 82 of February issue, an inquiry regarding a liquid metallic finish, the inquiry originating in Canada. We are official representatives of the Mirr-O-Mist Corp. in Canada. If you would be kind enough to provide us with the address of the inquirer, we would be obliged to you.—John Walter & Sons, Ltd.

Name and address are being sent you by mail.—ED.

Film Thickness Gage

We refer to page 116, March 1949 issue of INDUSTRIAL FINISHING, on which is illustrated what is termed as a new "Interchemical Wet Film Thickness Gage". We would appreciate it if you will give us the name of the company manufacturing this gage, so that we may get in touch with them.—J. Furn. Co.

See the ¼-page advertisement just eight pages farther along in the same issue.—ED.

Bleached Finishes

We notice in the October issue, in the "Letters from Readers" section, reference to articles you previously printed on producing bleached finishes such as blond, harvest, etc. We would like to get tear sheets of articles on this subject, if they are available.—L. Co.

These have been so much in demand that our supply of back copies and tear sheets of the articles are about exhausted. However, we are sending you tear sheets of two articles.—ED.

Silicone Enamels and Cements

Reference is made to November 1948 issue of INDUSTRIAL FINISHING, page 42 (part of Paul Blackmore's article, "25 Years of Industrial Paint Progress", beginning on page 30). We would appreciate your advising us as to the source of supply of "Silicone Enamels" as mentioned.

We are also interested in a Silicone Cement that can bond glass bases to glass bulbs in place of the usual cement consisting of bakelite resin with wood filler in powder form.—R. Lamp Corp.

If you had leafed through that same issue of the magazine, about 15 pages farther along, you would have seen a full-page, 2-color advertisement on Silicone-Base Finishes. All of the advertisements in INDUSTRIAL FINISHING are attractive and informative and are often the means of saving you time and money.—ED.

Bake Finish for Wood

We have begun the manufacture of a line of wood novelties and are in need of information regarding the practice of introducing a controlled percentage of moisture into the paint baking oven to counteract blistering and warping.

We would also appreciate receiving a prospective source of low baking or air-dry synthetic enamel for use on wood, that can be handled or stacked within 30 minutes after its application.—D.C.

How Much Tape Sold Annually

We have read with great interest Mr. P. C. Bardin's article on "Pressure Sensitive Tapes" in the March 1949 issue of INDUSTRIAL FINISHING. We are wondering if, in addition to the data included in your

NEW PERIOD
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FILLERS and STAINS—New Period has long been famous for its quality Fillers and Stains. Unequaled color-matching service.
LACQUERS—CLEAR & SEMI-GLOSS. Uniform and dependable—Suitable for coating almost any surface—Provides more coverage and unusual mileage. Cuts costs and maintains quality.
SEALERS—Provides excellent body, dries fast and sands easily.
LACQUER ENAMELS—FLAT & GLOSS. Available in a wide variety of matched colors and shades. Widely used by leading manufacturers in many different industries.
SYNTHETIC ENAMELS—A durable and trouble-free finish for fast production. Built to meet the most exacting requirements.
Remember New Period Finishes for Quality and Service
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES.
NEW PERIOD Production Finishes
ESTABLISHED 1917
NEW YORK WOODFINISHERS' Supply Co. Inc.
109 IMLAY STREET BROOKLYN, N. Y.

article, you have uncovered any information on the total volume of the various types of pressure sensitive tapes sold during a year's operation. This refers, of course, to the total volume for the entire industry, including all manufacturers.—V.V.&I.Co.

We believe there is no data on the total volume of pressure sensitive tape sold within a particular year. This company, of course, makes a great deal of this type of tape but does not divulge its total production. We believe other companies in the business probably are equally reticent, and that therefore such figures are not apt to be found any place.—Minnesota Mining & Mfg. Co.

Reclaiming Paint Sludge

We are checking a source of the reclamation of an alkyd or a paint sludge. Would appreciate receiving the names of any sources which you might have doing this work.—V.S.Co.

Several times you have made reference in this magazine to the salvaging of paint and enamel pigments. I expect to have continuously available, large quantities of paint and enamel overspray, collected from water-wash spray booths, which appears to be reclaimable.

I would appreciate your sending me the addresses of firms who would either reclaim or purchase the pigments. The addresses of any organization of this type in the eastern section of the country would be especially interesting because of the shipping costs involved.—G.Y. (Mechanical Engineer).

Only suggestion we have at the moment is Meckler Chemical Corp., 3748 E. 91st St., Cleveland 5, Ohio. Anyone else interested?—ED.

British Dipping Machine

We are sending you a folder that gives details of a new dipping machine which we are manufacturing. This may interest the readers of INDUSTRIAL FINISHING.

If you care to assist us in the matter, perhaps you could give some indication as to how best we could obtain the names and addresses of possible purchasers of our product. These would very largely consist of manufacturers of wood handles and brushes.—Lionel Hook & Sons, England.

Editor's Note: Quoting from the folder: "The articles to be dipped are suspended on an adjustable overhead platform, the container of fluid being lifted to the work by means of a ram, operated hydraulically by a simple and efficient force pump.

"Withdrawal is effected by controlling the speed of descent through a specially designed control valve, the oil traveling back into the supply tank upon which the pump is mounted.

"A pointer attached to the control valve spindle operates over a graduated dial, indicating a certain and sure withdrawal speed at any given position."

Branding Irons

Could you possibly supply us with the name and address of a source where we can obtain branding irons for the application of small numbers for product identification?

We are required by our customers to designate by code number, source of the product, and date of manufacture. Our principal products are television cabinets. —P. W. Co. (N.Y. State).

Try one or both of the following: Adolph Gottscho, Inc, 190 Duane St., New York, N.Y.; Hexagon Electric Corp., 159 Clay Ave., Roselle Park, N.J.—ED.

We Have Finish for Wood Bowls!

In the April, 1949 "Letters from Readers", I see on page 80 an inquiry regarding a finish for wood bowls. We have done considerable work involving satisfactory finishes for wood bowls, have worked out a high grade finish for this purpose, and have been supplying one of the nation's largest manufacturers of wood bowls for about two years.

We would appreciate it if you would keep our name in mind when inquiries on finishes for wood bowls are directed to you.—M. A. GLASER, Technical Director, Midland Industrial Finishes Co.

Albino Bleach for Wood

Please send us the name of the company that makes or handles Albino Bleach for bleaching wood.—C. F. Co.

We are not sure which concern makes or sells this particular brand of bleaching material. However, excellent bleaching materials can be obtained from any one of several companies whose names and addresses we are sending you by letter. —ED.

Coating for Stone Lab. Top

We find a reference in the April issue of Industrial Finishing ("Letters from Readers", page 82) to coating materials for laboratory soapstone tops. Would you please send us a list of sources for such materials?—S. Corp.

We are sending names of concerns that supply a penetrating sealer-coating which may serve your purpose; we are not sure. —ED.

CHADELOID Stains

Licensees

These authorized and licensed manufacturers supply you with genuine Chadeloid products. Note: many of these manufacturers distribute Chadeloid-licensed products under their own trade names. You may obtain Chadeloid products by demanding that the stains and stain-fillers you buy are Chadeloid-Authorized:

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Allied Finishing Specialties Co.
American-Marietta Co.
American Paint Works
Atlas Powder Co.
The Atomic Paint Co., Inc.
The Barrett Varnish Co.
H. Behlen & Bros., Inc.
Bigelow Varnish Co.
Boston Varnish Co.
A. C. Buschman and Co., Inc.
The Earl Campbell Mfg. Co.
Campbell Paint & Varnish Co.
Carasol Chemical Co.
Carpenter-Morton Co.
Cincinnati Varnish Co., Inc.
The Clinton Co.
Clover Leaf Paint & Varnish Corp.
H. B. Davis Co.
Flood and Conklin Mfg. Co.
The Foy Paint Co., Inc.
W. P. Fuller & Co.
Gilman Paint & Varnish Co.
The Glidden Co.
Gloss-Flo Corp.
Grand Rapid Varnish Corp.
Grand Rapids Wood Finishing Co.
C. W. Haynes Laboratories, Inc.
India Paint & Lacquer Co.
Indianapolis Paint & Color Co.
Interchemical Corp., Finishes Div.
Jamestown Finishing Products, Inc.
The Jasper Lacquer Co., Inc.
The R. F. Johnson Paint Co.
C. E. Krieger Co.
The Lawrence-McFadden Co.
Lenoir Woodfinishing Co.
The Lilly Co.
Lilly Varnish Co.
The Lindeman Wood Finish Co.
Charles R. Long, Jr., Co.
Maas & Waldstein Co.
John W. Masury & Son, Inc.
Murphy Paint Co., Ltd.
Newark Varnish Works
Nubian Paint & Varnish Co.
The Old Master Stain Co., Inc.
Palmer-Price Co.
Penfound Varnish Co., Ltd.
Perfection Paint & Color Co.
Randolph Products Co.
Reliance Varnish Co., Inc.
Reliance Varnish Co. of Illinois
Reliance Varnish Co. of N. Carolina
Robertson Co., Inc.
Rockford Varnish Co.
Roxalin of Canada, Ltd.
The Schaefer Varnish Co.
Security Paint & Varnish Corp.
The Edward J. Shannon Co.
Smith-Davis Co.
Southern Coatings & Chemical Co.
Southern Varnish Corp.
The Gilbert Spruance Co.
Standard Industrial Products, Inc.
Stanley Chemical Co.
Testor Chemical Co.
Trojan Lacquer Co.
U. S. Paint, Lacquer & Chemical Co.
L. R. van Allen Co.
Wabash Products Co.
A. Wilhelm Co.
John H. Witte and Sons
Wolverine Finishes Corp.
Woodfinishing Products Co.
Zapon Division, Atlas Powder Co.

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Quick Lacquer Repairs

We are finishing with oil stain, lacquer sealer and lacquer. We frequently have occasion to ask our finishers to repair minor damages in the finish. This involves, according to our procedure, brushing on extra lacquer, sanding down and polishing.

Our problem is in the waiting period while the lacquer is drying. This requires that we keep too many projects in process at once, involving more storage than we have room for, and a considerable wait for each item. We wondered whether an infra-red bulb could be used to speed up the drying of this wet spot of lacquer without damage to the surrounding finish.

We would also appreciate your comment as to any other method of repairing lacquer finish damages—one that would be speedier and less costly. Your comments on this problem will be greatly appreciated.—F.&S.

The waiting period while the lacquer is drying is difficult to eliminate. I do not believe an infra-red bulb will give satisfactory results because of the danger of blistering from this source of heat. It can be used with careful watching. After the lacquer is put on, put the lamp about 2-ft. away and direct the beam on the surface. Move it up a few inches at a time for a period of 15 minutes, until it is about 12-in. away. About five or ten minutes at this position should do the job. Watch closely for the formation of blisters. Because it has to be done so carefully and requires such close attention, I hardly believe this method is practical to use.

I suggest that you spot-spray the repairs instead of brushing on lacquer. By feathering out the edges, less sanding needs to be done.

I do not know of any more practical means of making repairs unless you have a skilled repair finisher in your organization. It is possible that such a man can burn in repairs with lacquer or shellac sticks, and sand the surface immediately. — ROLLIN H. WAMPLER.

Honduras vs. African Mahogany

The question has come up in the finishing departments of many factories as to whether it is easier and more economical to finish furniture made of Honduras mahogany, as against furniture made of African mahogany. One argument in favor of Honduras is that it is of a harder texture and finishes better and easier than the softer textured African.

One of the large lacquer firms in the East was recently called in by several large radio and television cabinet manufacturers, owing to considerabe trouble they have had in their finishing departments. Many of these cabinet manufacturers were using Honduras mahogany plywood and were experiencing trouble owing to the texture in the veneer. The pores were like worm holes that did not go straight down. The pore holes were a little crooked and after the filler and lacquer began to settle, and

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Chicago 14

the cabinets were finished, there were pin holes everywhere. This condition, however, was supposed not to have applied to African mahogany plywood. The pores of African mahogany, as we understand it, are like a "V" cut, whereas the Honduras mahogany pore starts with a "V" cut, and then slants inward to a crooked pore.

I wonder if you would have any information that would assist us in determining whether it would be better to purchase African or Honduras mahogany, mainly because of the finishing department?—C.C.Co.

We doubt that there is any essential difference in the pore structure of Honduras mahogany and the various species sold commercially as African mahogany. In both groups of species there will be considerable variation in the angle at which the pores intersect the surface within any one piece of wood, because of the tendency for these woods to have a great deal of interlocked grain and other forms of irregularity in the grain.

We believe these differences, that may occur within any one piece of the wood, would probably have a greater effect on ease of filling the pores than any minor differences there may be in the cross sections of the pores themselves.

Honduras mahogany does have a general reputation of being somewhat easier to finish than most of the other species that are sold commercially under the general name of mahogany. We understand, however, that the difference is associated more particularly with the tendency toward raised grain and the ease of getting smooth surfaces free from fuzziness. Indirectly this may have a bearing on ease of filling.

African mahogany has been widely used for many years and has been acceptably finished. It may be that the so-called African mahogany imported now is more variable in such properties as density and grain texture than was formerly the case, because depletion of the supply of these woods in the places of their original harvesting for export has led to the cutting of trees over larger areas of country comprising greater variations in species of wood and in climatic conditions of tree growth.—FOREST PRODUCTS LABORATORY.

I called on the finishing foreman of a firm that is a large user and importer of African mahogany. He said he did not believe that the pore structure, such as C.C.Co. describes, is to blame for their filling difficulties.

The trouble could be caused by several things. First, the filler itself may be the cause. Second, improper padding-in, commonly called a "sloppy job". Third, in wiping they may be pulling the filler out of the wood. Fourth, they may not allow the filler enough time to dry before applying subsequent coats. C.C.Co.'s letter has so much to do with wood structure and so little to do with their finishing methods that it is difficult to discuss their problem with anyone.—ASSOCIATE EDITOR.

It is my opinion that Honduras mahogany is more difficult to finish than African. The reason is because the pores in Honduras mahogany are usually larger and deeper than in African mahogany. For that reason Honduras is more difficult to fill and seal properly, and is more likely to give such troubles as pinholing and blistering.

I have run into this trouble several times. The most recent time was when I was called in about six weeks ago as a consultant, by a large manufacturer of radio and television cabinets. Perhaps it is the same firm to

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which you refer in your letter. I saw cabinets made of mixtures of Honduras and African mahogany during the process of finishing. In every case the finish on the African mahogany came out satisfactorily, but on the Honduras mahogany there were pinholes and blisters.

It is possible there may be some types of veneer cut from Honduras mahogany that will finish as well or better than the worst from African. I do not know about that.—ROLLIN H. WAMPLER.

This problem was first brought to our attention over a year and a half ago by the finishing foreman of a Chicago concern. At that time the problem was new to us but we felt that Liquafill Size might aid in its solution . . . Liquafill Size has been used successfully over a period of years on Phillipine mahogany, but, of course, this is different.

To make a long story short, Liquafill Size was successful in finishing these cabinets and was adopted.

We would not care to state that this peculiar problem of pinholing is inherent in Honduras mahogany alone, but we do know that when Liquafill Size is used on all mahogany the pinholing stops.—THE LIQUAFILL MFG. CO.

How to Coat Small Thin Parts

Could you give us any information as to a method of lacquer spraying or finishing of the small parts in this illustration? It would have to be something different from a dip-whirling machine as this does not do the job. The parts are so light that they stick together when drying. Please advise if you know of any other method.

These parts are stamped from sheet metal that is about 25 or 26 gage in thickness. They come in large quantities and at present we are setting these up on screens and turning them over which is economically out of the question.—C. F. Co.

You might try tumbling them. You may have to try two or three or more different types and sizes of tumbling barrels and load them only one third or one fourth full. For example, try the hexagon or octagon shaped barrel that rotates on a horizontal axis; then the round barrel which has tapered sides and rotates on an axis tilted 30° to 40° from the vertical. The tilted barrel can operate with or without a cover.

One or both types of barrels may or may not do the job better if it has ridges projecting inward from its inner surfaces. These inside ridges extend parallel with the axis of rotation and when the barrel is rotating, they carry some of the parts up higher and then drop them back to the bottom of the container. This action agitates the contents more than would occur when they were just sliding along the low side of a rotating barrel. It would help to prevent so many of the parts from sticking together once the coating covers each one.

With the parts all coated they could be dumped onto wire mesh or screen trays and subjected to forced drying. To prevent some of them from sticking together, the trays might have to be vibrated either occasionally or continuously.

The whole proposition calls for patience and experimenting. Several firms in this country and abroad, are asking this same question about the same kind of products.

If someone would develop an eco-

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nomical device or method for quickly distributing a large number of these items over a screen tray, with no one item overlapping or covering another one, then one part of the job would be simplified. The tray of parts could be coated on one side by low pressure spraying; this would be followed by drying. Then an empty tray would be placed over this loaded tray and the two reversed to expose the uncoated sides of the metal items as they rest on the second tray. Spraying and drying would follow to complete the finishing job.

Naturally, the trays that support the small parts will become coated and will have to be cleaned frequently. —ED.

Lacquer Finish Trouble

In January 1949 issue of INDUSTRIAL FINISHING, pages 94, 96 and 98, Questions and Answers, we note the advice regarding the elimination of the "grey up" appearance of a rubbed lacquer surface after it has been laying around a few weeks. We are troubled by this condition and are wondering if either or both of the following operations we perform have anything to do with it.

First, we rub our cases with a mixture of white gasoline and a little paraffin oil (about 25%), sand with No. 320 and then No. 400 wet-or-dry sandpaper. After the surfaces are rubbed, we apply hardware and install interiors, during which operation cases become slightly scratched on the rubbed lacquer surfaces.

Then we go over the entire case with a rag dampened in thinner, to remove these small scratches. I believe this operation is partly the cause of our trouble.

We then slush the dull cases with a burlap rag, covered with 4F pumice and wet with paraffin oil. We clean up this operation with clean rags, wet with water.

Any information you can give us will be appreciated.—M. Casket Co.

The greying of finishes after rubbing is caused, in most cases, by leaving rubbing oil, or any type of oil, on the surface. After rubbing, it is always best to clean the surface with an oil-free, or a practically oil-free emulsion polish. Regardless of how carefully a rubbed surface is wiped with rags, there are always traces of oil left which can cause greying. The emulsion cleaner has a valuable detergent action, much as would washing the surface with soap and water.

In your case, I suggest that you clean the surface with the cleaner before applying hardware. Whatever cleaning is required afterwards can also be done with the emulsion cleaner or polish. Cleaning with a thinner is likely to soften the film somewhat, which may in itself cause greying. Perhaps the main trouble in your case is the final slushing with paraffin oil. It is practically impossible to clean this off well enough by wiping the surface with rags.

Incidentaly, I understand that a large concern has brought out a new waxbase oil-free rubbing compound. I have heard in the trade that it is very good. I have written for some for my own evaluation, but I have not received it yet. This might be worth investigating. The idea sounds good. —ROLLIN H. WAMPLER.

Solvent Recovery Service Moves to Westfield, N.J.

Solvents Recovery Service, Inc., (We recover your solvents and thinners), formerly at 1019 Broad St., Newark, N.J., has moved its main office to 101 Central Ave., Westfield, N.J. Telephones, WEstfield 2-0666 and MArket 2-8084.

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Random Comment on the Industrial Scene

(Continued from page 6)

This should prove to be an excellent material for filling dents and low places in automobile fenders, bodies and other metal products.

* * *

A Scots Opinion On Furniture. Neil Morris, furniture manufacturer and designer of Glasgow, Scotland, was recently interviewed by the New York Times after he had visited American furniture markets.

Mr. Morris praised the work of some American designers, stating that they had made a valuable contribution to modern design which has no parallel in Britain. He said that the British had been able to make nothing but "utility" furniture for the past ten years, and will continue to do so for the next three or four years despite the lifting of certain restrictions.

The greatest weakness he found in contemporary furniture design in this country was that each designer appeared to be going in a different direction. Eventually, however he believes that things will settle down and modern design as a national expression will become more integrated.

There may be a lot in what this Scot has to say, and perhaps it might be well for American designers to thing this over. Back in the days of Chippendale and some of the other old mastercraftsmen responsibility for furniture designs rested with the cabinet maker. Today the press of production has shifted that responsibility directly upon the shoulders of the designer. It is a big responsibility, for he not only determines the type of furniture we use today, but the style of the antiques of tomorrow.

Utilize Waste Profitably. Construction has been completed and preliminary operations have started at the new $500,000 Maneely Chemical Co. plant at Wheatland, Mercer County, Penna. Designed originally to solve, at a profit, the pickle liquor disposal problem of the parent companies, Wheatland Tube Co., manufacturer of tubular products and the Wheatland Steel Products Co., producer of steel pipe couplings, the process is attracting wide attention throughout the steel industry and among experts concerned with the growing problem of stream pollution from industrial waste disposal.

The process at Maneely utilizes two waste materials from the operations of the parent companies to make three salable products: ferric hydrate, zinc sulphate and zinc chloride. The two wastes are spent pickle liquor, a ferrous sulphate solution resulting when steel in cleaned in hot sulphuric acid, and zinc wastes, by-products of the galvanizing operations. Liquid chlorine is the only other raw material necessary in this original process which more than pays its way as it performs the dual function of eliminating a serious waste disposal problem and converting components of the wastes to pure, useful, salable products.

Alkali Resistant Floor Finish

Alkali Resistant Floor Enamels have been added to the standard Pittsburgh Plate Glass Co. line of paints. The new products will be marketed under the Pittsburgh Finishing Material label and are now available in two colors, Pewter Gray and Tile Red.

The new enamels are rubber base products for use on interior cement floors where conditions of dampness, moisture, alkali or a combination of these elements are unusually severe. They are specifically recommended for use on areas located near chemical tanks, bottling machines, etc., where conditions are often abnormal.

A companion product, a Solvent Reducer, is also being introduced by Pittsburg Plate for removing wax and grease from areas prior to painting with Alkali Resistant Floor Enamel.

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"STRIPPER 202"—Something new for removing "stop-off" lacquers in seconds—Will not tarnish highly polished metal surfaces—Non-inflammable—Used cold—Non toxic.

Samples and further information supplied on request.

CHEMCO PRODUCTS CO., Inc.

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Spray Gun Has Detachable Material Hose

A quick-detachable connection that will shut off fluids under pressure when the hose connection is broken, and instantly restore the flow when the connection is re-established, has been developed by the Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Illinois.

With experience gained from the study of previous products, Bink's engineers applied a principle which has resulted in a new type of quick detachable fluid coupling that will not squirt when the connection is made or broken; it won't leak and it can't stick or jam.

Using a bayonet type joint, the detachable connection can be made or broken with a slight turn of the wrist. No time is lost matching threaded connections or tightening couplings. The practical convenience and advantage of being able to quickly disconnect the hose from a spray gun, material tank or another length of hose is further enhanced by the fact that there are no washers or gaskets to lose, leak or wear out.

This quick detachable material connection is a companion product to Binks' quick detachable air connection, which applies a similar principle to the air supply line.

Both are made in standard air and material hose sizes, with standard threads to fit all Binks fittings, spray guns and spray painting equipment.

Twist of the wrist detaches material hose.

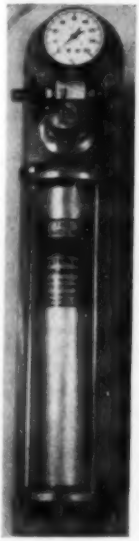
For Skin Irritations

Tarbonis cream is now available to combat occupational skin irritations. Some employees are allergic to various oils, abrasives, solvents, alkalies and chemicals. This cream, it is said, will effectively control irritations due to these causes.

The properties of this material are carried in a vanishing cream vehicle which rubs into the pores of the skin. It is neat and clean, and can be applied on the job without interfering with the employee's work. Pre-application is recommended where known irritation occurs.

Tarbonis cream is manufactured by The Tarbonis Co., 4300 Euclid Ave., Cleveland 3, Ohio.

Two New Air Separators



Sta-Dri is the name of a new combined compressed air regulator and separator made by Beach Precision Parts Co., 122 Mechanic St., Boonton, N. J. The unit is available in two sizes, Model A-1-A Junior which will deliver about 30-cu. ft. of air per minute at 100-lbs. pressure, and Model A-2-A Senior which delivers about 65-cu. ft. of air per minute at 100-lbs. pressure.

When installed at the air outlets these separators will filter out moisture, oil, scale and dirt to protect spraying operations and other air-operated equipment.

Each model is on a panel for convenient installation.

Bede Paint and Air Heater Approved by Underwriters' Lab.

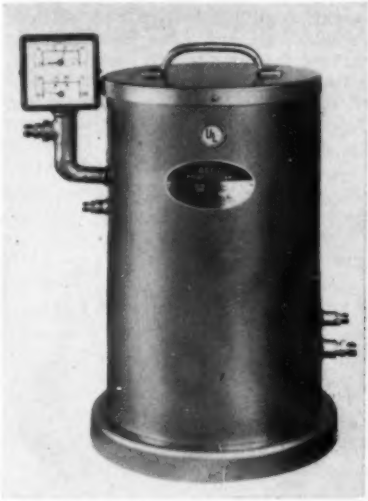
A completely new Bede Paint and Air Heater, of revolutionary design and construction, has recently been officially listed and approved by Underwriters' Laboratories, Inc.

The new explosion-proof Model-U Bede Heater for spraying paints, lacquers and synthetics, is the result of several years of research and development in perfecting a practical heater for economical production spraying. This new unit, with its many improved features, is manufactured by Bede Products, Inc., 4311 Ridge Road, Cleveland 9, Ohio.

One of the unique features of the new model Bede Paint and Air Heater is that *no water or heat transfer liquid is necessary*, since aluminum is used as the heat transfer agent between the two 1000-watt cartridge type heaters, paint heating coils, and air heating coils. A layer of glass wool insulation surrounding the heating unit prevents heat loss, and a sturdy sheet steel outer shell provides protection against damage. Complete operating safety is therefore assured.

With the Bede Paint and Air Heater, heavier paint films can be sprayed in a single coat, by heating the paint —lowering its viscosity and enabling the solid content to be increased by reducing the amount of thinner used. One coat often takes the place of two, at great savings in time, labor and materials.

The Bede Paint and Air Heater comes up to operating temperature within 15 minutes. Temperature is accurately maintained at pre-set val-



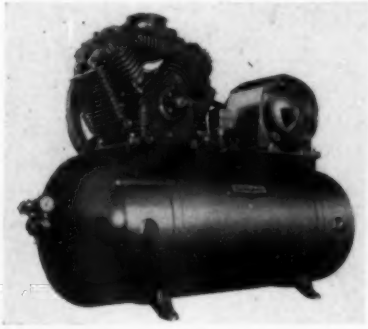
Bede paint and air heater is now approved by the Underwriters' Laboratories.

ues by a thermostat and thermoswitch. A thermometer records the paint temperature as it leaves the heater. No attention, other than plugging in the unit, is required.

The Bede Model-U Paint and Air Heater is available for 110 or 220-volt A.C. operation. Capacity is approximately eight gallons per hour. A circulating system, for use with longer paint hoses or for intermittent spraying, is available separately.

New DeVilbiss Compressor

More compressed air for each unit of electric current consumed is said to be a feature of three new and larger capacity compressor outfits brought out by The DeVilbiss Co., Toledo 1, Ohio. Further refinement of existing features plus the introduction of 4-cylinder balanced V pump, enlarged and highly refined cooling system, floating type tank mount, highly sensitive and efficient valve design, and other improvements account for the high efficiency, smooth, quiet operation and long service claimed for these new compressors. They are available in 7½, 10 and 15-hp. models.



Air compressor with 4-cyl. balanced V pump.

Portable Infra-Red Unit

A new 6-light infra-red portable heating unit has been introduced by the North American Electric Lamp Co., 1030 Tyler St., St. Louis, Mo., manufacturer of infra-red lamps and drying equipment.

This new unit, mounted on four swivel casters, contains six Nalco inside aluminumed, self-reflecting type lamps. It is adjustable in height from 18-in. to 6-ft., and it can be tilted to any angle or swung in a vertical or horizontal position for concentrated heating and drying.

New Line of Patching Sticks by Star Chemical Co.

The Star Chemical Co., Inc., of 4500 W. Cermak Road, Chicago, Ill., manufacturer and distributor of wood finishing specialties and supplies since 1920, announces the development of a completely new line of patching sticks, known as Star Nu Glo Patching Sticks. These sticks are not affected by alcohol or any finish, and cannot be pulled out of the patch by sanding.

The No. 100 of the new line is a pale transparent stick which is water white and ideal for all light modern colors. These sticks have been tested in various factories and the response has been favorable. The No. 100 pale transparent offers an easy solution to one of the problems that has confronted the trade for many years.

BEDE *LEADS AGAIN!*

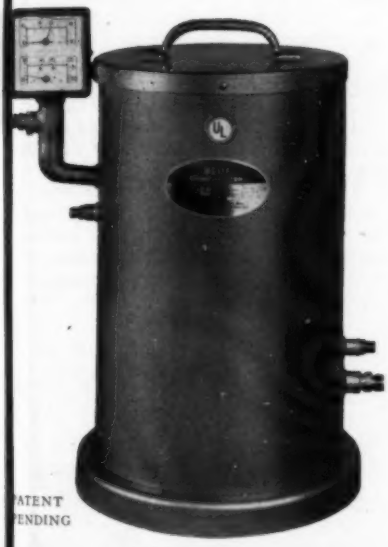
NEW IMPROVED PAINT HEATER

Underwriters Approved . . . . .

The FIRST and Only PAINT HEATER

Proved to be Completely EXPLOSION PROOF

LISTED UNDER REEXAMINATION SERVICE UL UNDERWRITERS' LABORATORIES, INC. OF



PATENT PENDING

By this independent laboratory

● This new heater uses no water or chemicals—requires no maintenance attention—is more economical and foolproof than ever—should last a lifetime. Available in any capacity, 110 or 220 volts.

With the Bede Heater, more than just the electrical connections are safe—the entire equipment is completely explosion-proof and is approved for use in Class 1 Group D hazardous locations.

Also available is a circulating model of advanced design, which eliminates the need for a pressure tank—can spray directly from any paint container.

Write for Descriptive Literature

BD

BEDE PRODUCTS Inc.

INDUSTRIAL FINISHING SPECIALTIES

4311 RIDGE ROAD • CLEVELAND 9, OHIO

Binks Gravity-Feed Gun

The new Binks Model 7VF gravity-feed spray gun makes it possible to spray quantities of fast settling materials without power driven agitators. While primarily designed to meet laboratory and development needs, the 7VF gun is admirably adapted to touch-up and patch work.

This spray gun has a material feed inlet on top of the gun head and is fitted with a quart top-mounted gravity-feed material cup. Connection of the material cup to the spray gun is through a swivel mounting that makes it possible to adjust the cup for correct operating balance and performance. The quick filling material cup

Has cup on top for easy agitating.

is provided with a snap-on watertight cover which prevents leakage or spilling when the cup is shaken or inverted for the agitation of quick settling materials.

Another convenience is Binks' quick detachable air hose connection. A simple twist of the wrist disconnects the gun from the air line and simultaneously shuts off the air; air comes on when the connection is re-established.

Complete information and data on Model 7VF spray gun is available on request from Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill.

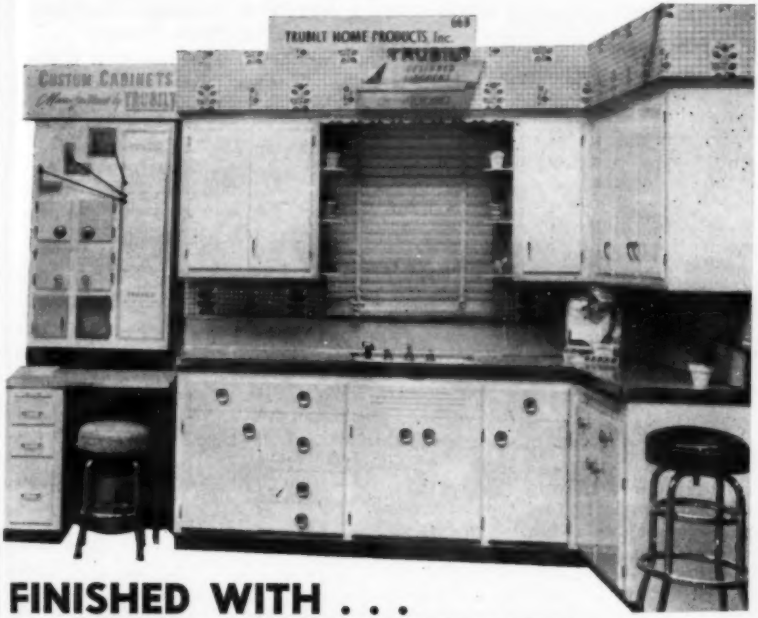
New Portable Sanding Machine Announced by Rockford Firm

The Johnson Engineering & Sales Co., 1137D Broadway, Rockford, Ill., announces its new Sand-Air, model S-9, a lightweight portable sanding machine for high quality finish sanding. The machine is air-driven, reciprocating type, built for heavy duty service in white sanding, sealer sanding and final finish sanding. The Sand-Air is also used for rubbing and polishing metal, plastic and other coated surfaces.

The machine has opposed straight-line reciprocation of double pads; instantaneous "natural grip" actuation; and a newly designed, recessed palm lever, flush with the contour of the machine.

There are no projections or accessories that can be bumped or damaged by dropping the machine. It is almost impossible to actuate the machine unless it is held in working position. The actuating lever is so sensitive that

Air-driven; weighs only 9-lbs.



FINISHED WITH . . . KIRCO SNO-TEX ENAMEL

The Trubilt Home Products, Inc., of East Paterson, N. J., well-known manufacturers of kitchen cabinets, have standardized their finishing production with KIRCO SNO-TEX air dry synthetic undercoater and enamel.

The undercoater air dries to sand in six to eight hours and KIRCO SNO-TEX ENAMEL air dries over night ready to pack. It is durable, non-yellowing and gleaming, snowy white with a smooth beautiful texture. A working sample will prove its worth to you.

KIRCO Modern Coatings are delivering trouble free performance to prominent manufacturers of metal, wood, plastic and glass products.

KIRCO

Kirker CHEMICAL COMPANY

ONE EAST ELEVENTH STREET • PATERSON 4, NEW JERSEY

ordinary hand gripping starts the machine.

All abrasive attachments are readily mounted or exchanged with new rapid action clips which grip or release the abrasive paper with a snap action movement. When closed, these clips accommodate one to ten sheets of abrasive paper.

The S-9 is constructed with a minimum of working parts, designed for trouble-free operation and long-wearing life. The power pads are directly powered from double pistons by a direct mounting pin.

All intake and exhaust ports are formed of copper tubing which is cast integral with the housing to eliminate possibilities of leakage. Double pistons are used for balanced motion and to counter-balance vibration.

Cylindrical ways, hardened and ground to close limits, furnish precision alignment for the abrasive shoes. A micarta wear strip is provided for long-wearing lubrication between the slides and the bottom cover.

The S-9 Sand-Air has a built-in water flushing attachment as standard equipment, for use where wet sanding is required. This feature is mounted so that there is no interference when the machine is used for dry sanding. The actuating lever controls both air and water inlets to the machine.

Safe Electric Heater for Hazardous Places

New all-electric explosion-proof heaters are now available—designed for use in places where solvents, enamel, lacquer and other inflammable materials are used. These heaters are made in three sizes, Model CX-2, 2000-watts, CX-4, 4000-watts and CX-6, 6000-watts. For detailed information write Electromode Corp., 45 Crouch St., Rochester 3, N.Y.

Abrasion Resistant Coating for Fiber Drums

Geon latex, a product of B. F. Goodrich Chemical Co., 324 Rose Bldg., Cleveland, Ohio, is being used as an abrasion resistant protective exterior coating for fiber shipping drums. It produces a high gloss which gives the drum an attractive appearance and a surface that can be easily washed.

Paint Brush Safe Preserves and Protects Paint Brushes

A sealed, air-tight, all-metal container designed to suspend paint brushes at the correct depth in individual compartments holding paint solvent or preserving fluid, is announced by The Y & N Mfg. Co. of Wooster, Ohio. This Y & N Brush Safe not only preserves paint brushes but it also makes a compact, light-

Inset shows removable waste compartment with wringer attachment which does away with the mess of cleaning paint brushes.

By the way, have you ever tried Vedoc?

TAKE A TIP and get better acquainted with *Vedoc* finishes, an outstanding line of *organic* industrial coatings. All *Vedoc* finishes are developed for a specific use, then slightly varied to best fit each customer's production setup. Let us tell you more about them!

LIQUID PLASTICS DIVISION

FERRO ENAMEL CORPORATION

4150 East 56th Street

CLEVELAND 5, OHIO

weight carrying case which can be locked to avoid tampering and theft.

Brush Safe has special waste-compartment with wringer attachment which extracts surplus paint or preserving fluid. Waste compartment is removable for draining and cleaning; and can be placed in any position within the Y & N Brush Safe. Movable brush clips in the individual storage compartments permit storage of brushes of varying dimensions. Each storage compartment is removable.

The Y & N Brush Safe is said to do away with the mess and drudgery of brush cleaning; is a time-saver. The cost of the Brush Safe can be repaid in short order through the safe-care and extended life of the brushes used. The all-metal construction and tight-sealing lid reduces fire hazard.

Automatic Spray Unit for Small Parts

Progressive Equipment Co., 8625 Mackinaw, Detroit 4, Mich., announces a new automatic spray unit which is adapted to finishing small parts such as lipstick holders, ballpoint pen caps, mechanical pencils, etc.

This fully enclosed-base machine has a power conveyor, water-curtain down-draft spray hood, and electric eye controls for spray gun operation. All spindles are mechanically revolved inside the spray hood, and if an empty spindle comes through, the electric eye shuts off the spray guns. Infra-red or electric strip-heated ovens may be used for baked finishes.

The unit is designed for 2-coat application with a possible production of 4000 pieces per hour.

Parts to be painted are placed on work holders on conveyor at the loading position.

Skin Irritations

EFFICIENCY IS SKIN DEEP

You can't expect top production efficiency when *skin irritations* plague your plant workers—causing *absenteeism* and *slow-downs*. TARBONIS has a long record in hundreds of plants for overcoming and guarding against the recurrence of *skin irritations*.

COMMON SKIN IRRITANTS

- Cutting Oils • Chrome Dyes
- Sodium Bichromates • Lime
- Metal Dust • Detergents
- Urea and Phenol • Naphtha
- Plastic Compounds

THE TARBONIS COMPANY, Dept. IF
4300 Euclid Ave., Cleveland 3, Ohio

Please send me a sample of **TARBONIS**

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE____

BY_____ DEPT.____

STANDARD OF COMPARISON
for over
100 YEARS

Slow Drying Yellow Oil Gold Leaf Size
Quick Drying Japan Gold Leaf Size
Slow Drying Clear Oil Metal and Aluminum Leaf Size
Red, Blue and Yellow Burnishing Clays

JOHN J. HEINS

Division of H. BEHLEN & BRO., INC.

10 Christopher St.
New York 14, N.Y.

1749 Berkeley St.
Santa Monica, Calif.

Air Powered Parts Cleaner

Magnus Chemical Co., Inc., Garwood, N.J., announces the Magnus Krazy Dip Senior, a metal parts cleaning machine which *uses cold solutions.* It will handle batches up to 350-lbs. Parts are mechanically agitated by air power. Air consumption is said to be from one to 2-cu. ft. per minute.

Portable Paint Spray Unit

A new, light weight, portable spray unit has been developed. It has a direct-drive piston which delivers 40-lbs. working pressure, in ample volume to operate standard spray guns. It plugs into any 110-120-Volt AC line. The motor has a safety cut-out, overload switch.

This outfit weighs only 47-lbs., is adapted to maintenance work, or as an on-the-spot auxiliary unit.

For quick on-the-spot spraying.

Complete information may be had by writing Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill., and asking for Bulletin 600.

Air Filters for Use in Spray Painting

Research Products Corp., Madison 10, Wisc., announces that it has developed two applications of air filters for spray-painting operations. One is the use of "Alumaloy" washable air filters to remove objectionable material from incoming air—an effective

Pit with several floor gratings removed. R-P filter pads in foreground have been replaced.

means of insuring paint purity and preventing product rejects. The other application involves filtering paint out of the exhaust air in paint-spray areas, by means of fiber replacement air filters.

Health regulations governing operations of paint-spray equipment usually specify frequent air changes in the operator's zone. The down-draft system is often used because it reduces health hazards in "drive-in"

GEHNRICH
"Vertical Loop"
CONTINUOUS CONVEYOR OVENS

Handle Large Volume of Production Automatically in Less Time with Much Less Labor

Write for Catalog 117

Gehnrich "vertical loop" conveyor oven for automatic dipping, draining and baking enameled auto horns. Recirculation heating assures clean, uniform baking. Work returns under oven to loading point for removal by man who also loads new work on flight bars. The process may also include preliminary cleaning or washing and drying in the same automatic conveying system.

W. S. ROCKWELL CO.
246 Eliot Street • Fairfield, Conn.

Your Signal! 9-8-7-0
CLEAR METAL LACQUER
For
silver, cadmium, zinc, copper, brass, aluminum.

OUTSTANDING

1. Adhesion to metal surfaces
2. Resistance to sulfur tarnish
3. Resistance to oxidation
4. Resistance to perspiration
5. Resistance to abrasion

Pale in color. Takes 100-200% reduction. Dries under 15 minutes.
A premium product — priced at ordinary lacquer levels.

THE VARNISH PRODUCTS COMPANY
5206 HARVARD AVENUE
CLEVELAND, OHIO

booths used for painting large objects or vehicles. Air contaminated with injurious fumes and pigments is drawn down and away from the operator's breathing zone, so that he can breathe clean fresh air at all times.

R-P pads make this down-draft system practical by preventing expelled air from depositing paint spray on ducts, blower blades, housings, louvres and other equipment. When residual paint is trapped by the filters it cannot settle on workers' cars and neighboring buildings, and one possible source of damage suits is eliminated.

In one of several typical installations, the directional pull of exhaust air is eliminated by the down-draft system. Removable 8-filter sections containing R-P Self-Seal filter units are mounted in a pit covered by a heavy-duty grating to support the many-ton loads of equipment to be spray painted. An exhaust fan, connected to the pit by an underground duct, draws air from the paint-spray area down through the grating and filters, into the pit, and finally expels it. Besides cutting down fire hazards, the installation improves efficiency to such a high degree that it actually contributes to longer life of exhaust equipment.

Two-Gallon Pressure Tank

The Black Mfg. Co., Baltimore, Md., announces a new 2-gallon pressure tank model N400. It is completely galvanized, both inside and out, and is painted on the outside. It has a concave bottom with a reinforcing skirt.

The top, which has a working pressure of 50-lbs. per square inch, is made of heavy cast iron, painted to prevent rusting, and is attached to the tank with four brass swivel bolts.

The pressure tank is equipped with a forged brass regulator, a full size pressure gauge, combination blow-off relief valve and brass material outlet. All fittings are standard pipe thread sizes throughout.

Handy 2-gallon pressure tank.

Non-Foaming Spray Booth Compound Developed

The DuBois Co., Cincinnati 3, Ohio, has developed Differentiated Klarifiant, a non-foaming water-wash spray compound. Because of its non-foaming properties, higher concentrations can be used which, in turn, keeps the hydraulic system of the spray booth absolutely clean. This material is recommended for use in the newer down-draft booths where even the slightest bit of foam is objectionable.

Differentiated Klarifiant controls paint overspray effectively and will keep spray booths clean.

Very Flexible

FLAT BLACK*

OUTSTANDING TOUGHNESS

Lacquer Enamel 123F

Excellent for
Vanity Cases, Metal Cabinets, Photographic Instruments and Electrical Equipment.

• • •

It may be drawn or die stamped.

• • •

Very adhesive and waterproof.

• • •

Dries rapidly to produce a finish with excellent mar-proof properties.

*Also available in gloss and semi-gloss.

Custom Tailored Finishes

TO FIT YOUR REQUIREMENTS

A GOOD FINISH
MEANS ALAKA

ALAKA
THE PRACTICAL FINISH

LACQUER & CHEMICAL CORPORATION

218 FORTIETH ST. BROOKLYN 32, N.Y.

Snyder Brothers Company

TOCCOA, GEORGIA

P. O. Box 548 Telephone 570

Manufacturers of High Quality Industrial Lacquers

SERVING THE SOUTHEAST

COMPLETE TECHNICAL SERVICE AT YOUR DISPOSAL

Water Wash Compound

A water wash compound for paint spray booths that lubricates the overspray, is announced by Northwest Chemical Co., 9310 Roselawn Ave., Detroit 4, Mich. It is identified to the trade as Northwest "Number One". This compound coats each particle of paint with a non-volatile solvent, and any overspray so lubricated won't stick to the back curtain or any of the eliminators. The booth keeps clean and the sludge remains floating for easy skimming. Northwest "Number One" is easy to charge and simple to control.

S-W Paint Sticks to New Galvanized Surfaces

A paint is now available for new galvanized metal surfaces, such as those of Quonset and other steel buildings which heretofore have required weathering or chemical treatment before a successful bond could be obtained.

The paint, trademarked "Quon-Kote", is specially compounded with a linseed oil base to react chemically with the zinc on new galvanized surfaces to form a tightly-bonded protective coat without a primer. It is made in five colors by the Sherwin-Williams Co., Cleveland, Ohio, for the Great Lakes Steel Corp., Quonset manufacturer. The colors, which may be intermixed for various shades, are white, cream, red, green and gray.

Small Electric Immersion Pump

Samuel S. Gelber Co., 162 N. Clinton St., Chicago 6, Ill., has developed a small immersion pump powered by a 1/30th-hp. motor. It is only 14⅛-in. high, weighs 9¾-lbs., is bearingless with only one moving assembly. It is especially adapted to moving liquids of oily, acid or alkali content.

For fine decorative finishes use —

MEARLMAID PEARL ESSENCE

THE MEARL CORPORATION

153 WAVERLY PLACE NEW YORK, N. Y.

"World's Largest Producer of Pearl Essence"

I. C. D. FORMULA NINE

NON-INFLAMMABLE

« *wax free* **REMOVER** »

for paint, varnish, lacquer, baked enamel, adhesives

EASY TO APPLY—NO AFTER CLEANING

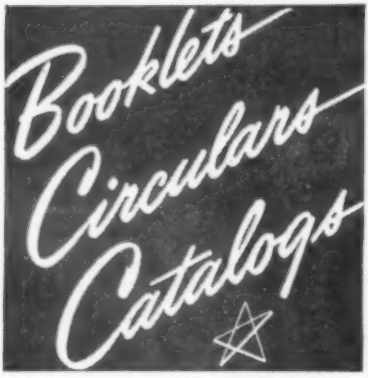
I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.

BRUSH CLEANER I. C. D. — non-inflammable brush cleaner works fast . . does not injure nor loosen the bristles. Easy to use . . leaves the bristles clean as a whistle. Order a gallon can and convince yourself.

ORDER TRIAL GALLON AT DRUM PRICE

INDUSTRIAL CHEMICAL DEVELOPMENT CORP.

347 MADISON AVE. NEW YORK 17, N. Y.



Automatic Air Filter Folder

Dollinger Corp., 11 Centre Pk., Rochester 3, N.Y., offers an 8-page folder describing model A-3, a 4-stage automatic air filter. Factual as well as performance data are included. It is called Staynew Automatic Filter.

Material Handling Bulletin

An 8-page bulletin describes and illustrates how various types of conveyors are used to move work in process as well as finished parts. It was prepared by Triangle Equipment Co., 45 River Road, Nutley, N.J. Copy may be had upon request for Bulletin No. B-8.

Portable, Power-Driven, Hand-Guided, 2-Pad Sander

Bulletin IF39, published and distributed by Sundstrand Machine Tool Co., Rockford, Ill., reveals practical information about possible savings in sanding or smoothing the bare or prime-coated surfaces of wood, metal and plastics preparatory to finishing with paint, varnish, lacquer or enamel.

Non-Toxic Preventative for Mildew and Rot

A guide to formulating and applying Milmer 1, industrial preservative, is now available from the manufacturer, Monsanto Chemical Co., Organic Division, 1700 S. 2nd St., St. Louis 4, Mo.

Milmer 1, chemically copper-8-quinolinolate, is claimed to be one of the most powerful rot and mildew preventatives known. It is virtually non-toxic to man, does not irritate or sensitize the skin and is not decomposed by ultra-violet light.

The 15-page bulletin, based on extensive field and laboratory experience, gives detailed descriptions of the material, and minimum formulations and methods of application to properly protect textiles, plastic coated fabrics, protective coatings and other products.

Booklet on Floor Care

Breuer Electric Mfg. Co., 5100 Ravenswood Ave., Chicago 40, Ill., has issued a 34-page booklet entitled The Tornado Method, on the care, maintenance and cleaning of all types of floors, both old and new. Detailed information is given on removing old finishes and stains, bleaching, sanding, sealing, waxing and polishing. A free copy may be had by writing the company.

Corrosion-Resistant Alloys

A new bulletin, Solving Corrosion Problems with Chemalloy High-Alloy Castings, has been released by the Electro-Alloys Division of the American Brake Shoe Co., Elyria, Ohio. Copies are now available and will be mailed upon request.

A 6-page folder, this bulletin features two important charts that will help in selecting the right alloy for most corrosive conditions. A "Quick Selector" shows the comparative corrosion resistance of the most commonly used grades in 179 different corrosive media. The bulletin also includes a list of standard corrosion-resistant alloys showing ACI types, AISI types and Chemalloy grades with their nominal composition, mechanical properties and descriptive remarks about each.

New Color Harmony Manual Announced by C. C. of A.

The third edition of the Color Harmony Manual provides a set of standards for artists and educators, helps in the discovery and invention of harmony, and serves as a means of specification and coordination in printing, painting, dyeing, and design generally.

The new Manual has 943 colors, an increase of 263. These extra colors were selected on the basis of their general industrial usefulness and are marked in accordance with the Ostwald notation.

The color chips were made by spraying a mat, pigmented lacquer of appropriate color to one side of a sheet of clear, transparent cellulose acetate. This provides a washable color standard. Furthermore, the double surface feature—mat on one side and glossy on the other—makes for easier comparison to materials of different textures. The color chips are hexagonal

in shape, which not only distinguishes them and this edition from the others, but also forms compact triangles in which the monochromatic relationships are more readily apparent.

A complete new text, written for the third edition, accompanies each Manual. Fully illustrated, it explains the theory in detail, as well as the methods of discovering harmonious combinations.

Completely revised and considerably enlarged, this new edition of the Color Harmony Manual should serve successfully to meet the growing and critical demand for color coordination in art, education, production, and merchandising. It is priced at $113.38 by Container Corporation of America (Color Standards Department), 38 S. Dearborn St., Chicago 3, Ill.

E. H. Draut, Sales Manager of Protective Treatments, Inc.

Appointment of Earl H. Draut, as Sales Manager, is announced by Protective Treatments, Inc., Dayton, Ohio, manufacturer of strippable protective coatings, paint removers and industrial specialty

E. H. Draut Becomes Sales Manager of Dayton, Ohio firm.

finishes. Mr. Draut succeeds Charles H. Hampton who has retired because of ill health.

Mr. Draut is well known to the trade and to the paint industry through his ten years association with another company in Dayton, Ohio, as Sales Representative and Sales Supervisor.

He is a graduate in Business Administration of Miami University, Oxford, Ohio. Subsequently, he engaged in Personnel and Production Engineering work for Armco Steel Corp., Middletown, Ohio.

Sandblasting Equipment

An advertising piece that illustrates sandblasting equipment for cleaning metal surfaces in preparation for painting, comes from Leiman Bros., Inc., 200 Christie St., Newark 5, N. J.

ONE COAT HAMMERED METAL FINISH

In POLYTONE, we have developed a one-coat finish that reproduces the depth and mirror-like quality of hammered metal with remarkable fidelity. Just spray on and bake. It adheres excellently. Available in a variety of colors. Send for sample panel in color you desire.

DURALAC CHEMICAL CORP.
84 LISTER AVE., NEWARK 5, N. J.

Industrial FINISHING Editorial

Value of Inter-Plant Conferences

The idea of conferences is good provided they are not called too often and with too little excuse. Much good can be accomplished in a well planned, properly conducted meeting.

The president of one large plant has started a plan of having people attend conferences who are not directly affected by the decisions to be made. For instance, production men set in on a sales conference, financial men on an advertising session, and advertising men on a production meeting.

In this way each individual learns something of the other fellow's problems and more about the business in general. Besides, the men from other departments offer suggestions based on a different viewpoint. Some are good and some are unworkable, but a fresh idea is always welcome. On the whole, the plan is highly successful.

Cheap Short Cuts May Be Costly

It's all very well to look for ways to cut costs—reduce wastage and materials, supplies and labor, and to make everything that is purchased go farther. In doing this, however, let's not tamper with the quality of the product, especially anything that can affect the finish. After all, it's the attractive appearance of a product, plus its probable durability (resistance to wear, etc.) and its utility value that make prospective buyers decide to exchange their money for it. If any buyer is disappointed, look out; it means trouble ahead for Mr. Manufacturer.

Some time ago a large furniture manufacturer, buying finishing materials from three different sources, made some changes in production methods. In the finishing department some short cuts were made that looked promising, and still the company had a finish that seemed to be satisfactory. "Seemed to be" is right. Before the furniture was shipped to dealers, someone accidentally discovered that the finish could be easily flaked off in most places by scraping it with his thumb nail. For a few hours several male thumb nails were busy testing the finish—flaking it off here and there. It was a bad day for all concerned.

The finish had to come off clean to the wood, from all of that furniture. Experts were not in agreement as to just what caused the trouble. Regardless of what did cause it, a large finishing department faced the unhappy prospect of being turned into an unprofitable refinishing shop for the next week or two. Obviously the cost-cutting short-cuts which preceded that experience paid off with a substantial loss and a lot of severe headaches.

Flocking Equipment and Supplies

Flock Supply & Service Co., 2221 Berwyn Ave., Chicago 25, Ill., announces sales and service in Flosco products—flocking machines and equipment, flock adhesives, glass beads, diamond dust and color tinsel. Flock kits for either silk screen or spray applications are also available.

Sell Without Calls or Service? Not Today!

A metal products concern that uses finishing materials recently received a call from the representative of a nationally-known supplier of all kinds of paints, varnishes, lacquers and enamels. "We haven't been getting any paint business from you recently", the representative declared. Upon investigation it was found that no one from his company had called on this large plant, located in a big city, for more than 18 months.

Incidentally, it might be mentioned that in the upper brackets of ownership, one concern owns stock indirectly in the other one, therefore some people probably assumed that the big paint and lacquer company would naturally get the metal products firm's paint business regardless of competition or the fact that their plants are located in different parts of the country. Evidently, the paint and lacquer company's representative, assigned to that territory, thought so too. If so, he made a costly mistake.

In the meantime, a live-wire salesman from a fair-sized local paint company made it a point to call on this metal products outfit regularly. He became acquainted with certain key men, learned their paint problems and their requirements, and began supplying materials for product painting and, eventually, for all kinds of plant maintenance painting. The materials he supplies are of uniform color, dependable quality, suited to the job, and they are promptly delivered in the quantities wanted. In addition, he was instrumental in having a few special paint materials formulated in his firm's laboratory for this account.

If or when any problem or trouble develops in the finishing room or paint shop, this polite and obliging salesman-serviceman can be counted on to come out immediately and correct

you'll never know
how much
you can save
by using
"LIQUID ENVELOPE"
PEELABLE
SPRAY-BOOTH
COATING
until you
take advantage
of this
test sample
offer

5 gallons shipped on a
money-back guarantee $13.75
Attractive low price on quantity re-orders.

BETTER FINISHES
AND COATINGS, INC.
268 DOREMUS AVE., NEWARK 5, N. J.
127 E. 7th ST., LOS ANGELES 14, CAL.
IN CANADA: HUGH RUSSEL & SONS, LTD.
MONTREAL AND TORONTO

How to improve

METAL PRODUCTS

through better finishes

Here is a book that answers all the questions on finishing metal products and shows the methods, techniques, and cost factors in producing them.

Just Published

FINISHING METAL PRODUCTS

New Second Edition describes all recent developments in this field.

By HERBERT R. SIMONDS and ADOLPH BERGMAN, Consulting Engineers. 352 *pages*, 5x8, 135 *illustrations*, $4.00.

A COMPLETE PRACTICAL MANUAL covering usual types of finishing—galvanizing, polishing, plating, lacquering, painting. Also discusses fully such subjects as use of color and production and use of prefinished materials.

COVERS FINISHING from a business and sales standpoint. Deals with methods that improve results and reduce costs. Helps you determine types of finish with greatest sales appeal.

EXPLAINS SHOP TECHNIQUES. Tells how to reduce polishing and buffing costs. Gives techniques for cadmium plating, chromium plating, spray coating. Tells how to use enamels and lacquers in metal parts production.

This up-to-date, handy manual should be at the finger-tips of plant managers, superintendents and foremen. Send your remittance today to

INDUSTRIAL FINISHING

1142 N. Meridian St. Indianapolis 4, Ind.

the difficulty in short order. Now he makes it a point to call on the company twice a week. "Even if you haven't something to order," he tells them, "you may have a problem, or some trouble may occur in the paint line; if so I'll be here to take care of it".

This alert salesman is always welcome at that plant and he isn't going to be dislodged from their profitable paint account, or most of it, so long as the present management is in power.

Know More About What You Finish

★ In finishing industrial products there are many specialists. There are men who specialize in making finishes for metal surfaces, and men who specialize in applying such finishes. Paper finishing, wood finishing, marine finishing, aircraft finishing—all require specialization.

In every field one of the important requirements for competence is a thorough understanding of the substrate, or *the surface to be finished*. In wood finishing this is particularly true. Wood is essentially a non-uniform material, a material of infinite variety and complexity. This fact explains why the development of wood finishing materials is full of pitfalls and seeming contradictions. The user of wood finishing materials will always be in trouble unless he has an adequate basic understanding of wood.

Many wood finishers regard wood as essentially an ornery, contrary

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★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials, paying for those published.*

BARRETT "FILWHIRL" ENAMELERS make easy work of many difficult coating problems

The Barrett Centrifugal Enameler

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the better chance for getting *X*'s business? Another salesman, an old friend, called on *X* some time ago. With the license of long friendship he asked the question: "What must I do to get your business?"

X's reply was quick and to the point: "Let's reverse the question; what can you do for me?"

Is there a lesson in this for salesmen of industrial coatings?—W.R.H.

Better Quality with Better Workman

★ In the finishing shop or department, quality control is not entirely a matter of mechanical perfection, rigid inspection, and numerous tests. These things can maintain high standards of quality only at considerable cost. To bring costs down to a practical level for a competitive market, top management and foremen must enlist the aid of every worker along the line.

Satisfactory conditions of morale, pride in the company for which he works, and a desire to contribute to the excellence of finished products are three links in a single chain. As these points grow stronger, the expense of quality control can be reduced to an absolute minimum.

Naturally, not all employees have, in the same degree, this eagerness to turn out top quality workmanship. Frequently a shift in personnel would place in key positions men with the desire to allow only the finest workmanship to leave the finishing shop or department. Utilizing this attitude in positions most closely connected with quality control will supplement tests and inspection without adding anything to overhead.

Time and again it has been reported that workers want recognition as a major factor in satisfaction with their jobs. Individual or department

critter—and indeed it often seems to be just that. But wood technology is an orderly and fascinating subject. Even a casual study of the growth and development of trees, the structure of wood, and how it is prepared for use as a structural and decorative material will yield many rewards in an understanding of many of the anomalies of wood finishing. The differences between species are important to the finisher, and he should be able to recognize the more common species and take advantage of the characteristics that have a bearing on finishing.

Different species of wood often require different techniques and materials; and yet it is hardly possible to design definite material and techniques for each specie, as there is as much variance within species as between them.

An understanding of what causes the rough streaks often seen in quartered mahogany points the way to proper finishing, and suggests remedies for other difficulties. For the wood finisher who aspires to be a real craftsman a study of wood technology is highly recommended. The Forest Products Laboratory at Madison, Wisc., can be helpful in suggesting books and periodicals that are valuable and authoritative source materials. —R. H. WAMPLER.

Pearl Essence Finishes

It is possible to combine certain types of pearl essence crystals with oil colors. The effect, if the admixture is properly proportioned, is to impart a luster to coatings made from this material. This luster is softer and more of a satin effect than glossy. Experimental tests with such an admixture have produced an effect on metal that is suggestive of cloisonne enamel.

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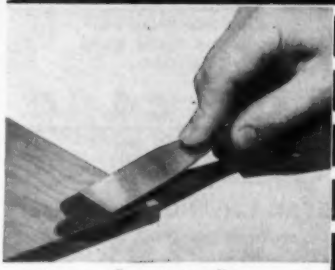

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Which Salesman Would You Pick?

★ My friend Mr. *X* is the owner of a newly established manufacturing enterprise in the field of industrial finishes. He is being forced to learn some of the rudiments of purchasing. Many salesmen of chemical raw materials call on *X* in the hope of getting his business. Since his firm is still comparatively small, *X* must also develop the salesmanship or merchandising technique necessary for carrying on his own enterprise. Observation of the techniques employed by visiting salesmen provides many lessons he can apply to his own sales efforts.

A good object lesson is seen in the case of two competing salesmen who called recently on the same day. Both are pleasant, personable individuals. They represent two firms whose products are highly regarded and who are directly competitive. Prices are competitive, and neither firm can offer, in general, anything that the other cannot.

Salesman *A* came in with a smile and chatted pleasantly a few minutes. Respecting the fact that *X*'s time is limited, he quickly came to business. "Well, *X*, is there anything I can do for you today?" *X* racked his brain and was forced to admit there was not. The interview ended quickly and pleasantly.

Salesman *B* came in a couple of hours later, equally pleasant. But he came to business a little differently. Preliminaries over, he began: "Mr. *X*, I have been thinking about one or two of your problems while I was driving up here, and have an idea or two you may find useful. For example, take the matter of————," and he outlined the problem and explained where one of his products would aid in its solution.

Which salesman do you think has

contributions toward quality control deserve write-ups in the plant newspaper, notice on the bulletin boards, or special awards. This matter ties in so closely with profitable production that management should start now to encourage an all-out continuous effort toward winning every worker's interest in quality control.

In larger departments, it may be possible to relate quality control to individual pay checks. But there are dangers when the subject is over-emphasized or poorly handled. It may bring on such extreme caution that production suffers, or it may build up worker tension which can offset the first results. Reasonable recognition helps put quality control in its normal and rightful place as an important (but not the only) factor in efficient production.

If your finishing department has been achieving quality control at too high a price, study the personnel angles involved. This may aid you in reaching a solution.—D.M.G.

Pause in Production? Clean Up Shop

To a production man perhaps nothing is quite so forlorn and dismal looking as an idle shop, unless—adding insult to injury—it's an idle shop that's dark and dirty too. I happened into one recently; it was only partly idle and this perhaps only temporarily. My first thought was, why doesn't the boss take this opportunity to have the boys clean things up around here; get it shaped up for the jobs that are to come. As it is, it looks like poor business, poor management and poor housekeeping; leaves one actually depressed for the moment.

Suppose I had been a banker, or a buyer, or a prospective customer about to order some work performed in this

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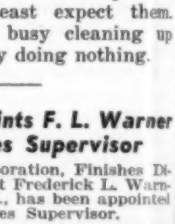
finishing department. What a bad impression this unkept place of idleness would have made on such an individual or on anyone else stepping into the place. On the other hand, if everything had been cleaned up and in order, plus adequate lighting and reasonable production facilities, the place would have been inviting—a welcome and pleasant sight for any buyer or prospective customer, or even some acquaintance of a prospective customer.

Impressions count for more than some people think, and the results of those impressions often bob up when and where you least expect them. Better be caught busy cleaning up the place than busy doing nothing.

Interchem Appoints F. L. Warner as N. Y. Sales Supervisor

Interchemical Corporation, Finishes Division, announces that Frederick L. Warner of Marsellus, N. Y., has been appointed New York State Sales Supervisor.



F. L. Warner now N.Y. Sales Supervisor for Interchemical Finishes Division.

With the exception of three years spent as an officer in the United States Navy, Mr. Warner has served with Interchemical's Finishes Division since 1936. He entered the company's employ at Cincinnati upon graduation from Denison University. Prior to the war he was Philadelphia Branch Manager.

A new 124-page, 6x8-in. book, "Finishes for Aluminum" has just been issued by Reynolds Metals Co., 2500 S. Third St., Louisville, Ky. The book furnishes information on the various processes for applying surface finishes to aluminum, as well as the characteristics of the finishes so produced.

Hot Spray in Europe

WHEN Jim Yeager, Hercules lacquer marketing supervisor, visited Europe last summer, he was surprised to observe the extensive use of the hot-spray application of lacquers for furniture. Developed during the war when solvents were both scarce and expensive, the method was so successful, mechanically as well as economically, that its use is continuing even though solvents are much more readily available.

In Sweden, where fine furniture is a national pride, 90% of all the furniture manufactured is finished with hot-spray lacquer. And in Holland the hot-spray method is highly praised, with 60% of their furniture finished in this manner.

At present only 5% of the furniture made in England is finished with hot lacquer, but it is predicted that use will increase greatly as soon as the Government releases its controls on the manufacture of furniture.

Hot lacquers are used to a lesser degree, Jim found, in France, Belgium, and Switzerland, but with improved lacquer formulations and spray equipment, manufacturers look forward to more extensive use of the method.

Jim says that, generally, the Western Europe countries are well informed on progress made in the protective-coatings field in the U. S.—LacQuotes, Hercules Powder Co.

Tape Package Redesigned

Technical Tape Corp., New York 53, N. Y., manufacturers of masking tape called, "Tuch Tape", has redesigned its package for easier identification. The new box makes the most and best use of the reverse side, too—re-employing advertising copy in a short factual message.

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A new edition of the basic technical booklet "Ethyl Cellulose, Properties and Uses" has recently been issued by Hercules Powder Co., manufacturer of ethyl cellulose, Wilmington, Dela.

The new edition contains considerable new as well as revised information about this versatile cellulose derivative which can be formulated into plastics, lacquers, varnishes, film and foil, and adhesives. Many indicated applications are suggested by the technical data contained in the booklet.

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